

**FAUNA HAWAIIENSIS**  
OR THE  
ZOOLOGY OF THE SANDWICH (HAWAIIAN) ISLES:

Being Results of the Explorations instituted by the Joint Committee  
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**VOLUME I. PART V.**

*MICROLEPIDOPTERA*

By THE RIGHT HON. LORD WALSLINGHAM, M.A., LL.D., F.R.S.

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# FAUNA HAWAIIENSIS

VOL. I. PART V.

*MICROLEPIDOPTERA*

LORD WALSINGHAM

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## MICROLEPIDOPTERA.

By the Right Hon. Lord Walsingham, M.A., LL.D., F.R.S.

I. *PYRALIDINA*.

## I. Fam. PYRAUSTIDAE\*.

## 1. LINEODES Gn.

Type *Lineodes hieroglyphalis* Gn. (Hmsn.).

LINEODES Gn., Sp. Lp. VIII. (Delt. Pyr.) 234 (1854); Wkr., Cat. Lp. BM. XVII. 409 (1859); Fern., Mass. Agr. Coll. Ann. Rp. XXXV. 90 [= sep. 8] (1898); Wlsm., Ent. Mo. Mag. XXXIV. 191 (1898); Hmsn., Pr. Z. Soc. Lond. 1898, 592, 603, No. 160: 1899, 283—4, No. 160, fig. 160.

= *SCOPTONOMA* Z., Verh. ZB. Ges. Wien. XXIII. (1873), Abh. 327—8 (1873); Meyr., Tr. Ent. Soc. Lond. 1886, 2.

1. (1) *Lineodes ochrea*, sp. nov. (Pl. X. fig. 1).

Antennae pale yellowish cinereous. Palpi ochreous, sprinkled with greyish fuscous externally. Head and Thorax greyish fuscous, mixed with ochreous and pale cinereous scales. Forewings pale brownish ochreous, sprinkled with greyish fuscous scales on a short basal patch, produced along the dorsum, where the dark sprinkling becomes thicker and is dilated outward and upward nearly to the middle, forming, with a thinner sprinkling on the costa before the middle, an ill-defined broad band interrupted by a narrow pale cinereous space along the cell; this is extended outward, gradually widened towards the apex, which it does not reach, and is interrupted by an irregular broad greyish fuscous band, obliquely placed, crossing the end of the cell, but not reaching to the costa or dorsum; its upper and lower margins are produced respectively in narrow greyish fuscous lines which meet and enclose the outer end of the pale cinereous space which obviously represents the upper fold of the wing; above it are three or four

\* I retained the genus *Lineodes*, of which I possessed a fairly representative collection, owing to its having been originally included in the *Pterophorina*; for this reason Mr Meyrick did not deal with *Lineodes* in treating of the *Pyraustidae* to which family it belongs. WLSM.

greyish fuscous costal spots; a greyish fuscous terminal band precedes the pale cinereous cilia through which runs along their middle a somewhat broken greyish fuscous line. Exp. al. 22—26 mm. Hindwings and cilia pale cinereous, with some slightly darker mottlings beyond the cell and along the dorsum. Abdomen brownish ochreous, much sprinkled with greyish fuscous. Legs pale cinereous, the posterior ends of the tibiae sprinkled with greyish fuscous.

Type ♀ (26723) *Kauai*, Mus. Wlsm.

HAB. KAUAI: 3000—4000 ft., IV. 1894; Kaholuamano, 4000 ft., IV. 1895.—HAWAII: Kona, 4000 ft., VII. 1892; Olaa, VII. 1895; Hilo, 2000 ft., XII. 1895. Ten specimens.

This species resembles *Lineodes interrupta*, Z., especially in the central and outer shades being separated at the costa, but it differs in its ochreous colouring and in the pattern of the outer markings.

2. (2) *Lineodes subextincta*, sp. nov. (Pl. X. fig. 2).

Antennae cinereous. Palpi projecting more than the length of the head beyond it; greyish fuscous. Head greyish fuscous, with a small whitish spot on either side behind the base of the antennae. Thorax greyish fuscous, mixed with cinereous and fawn-brown scales; tegulae with long hair-like scales at their extremities. Forewings cinereous, thickly dusted with greyish fuscous, especially along the dorsal half, with a slight admixture of fawn-brown on the costal half before the middle and in a pale subterminal band; the only markings that are traceable are a greyish fuscous shade before the middle, crossing the upper fold obliquely backward from the costa and reaching the dorsum at about one-third of the wing-length (in some specimens this is almost entirely lost in the greyish fuscous suffusion); a broad irregular somewhat triangular patch embracing the outer extremity of the cell extends to the costa a little before the apex, but its lower angle does not reach the dorsum, the basal portion of this triangle is somewhat darker through the more thickly packed greyish fuscous scales than its outer portion, except a narrow marginal line running parallel with the termen; four dark costal spots precede the apex and a narrow reduplicated greyish fuscous band follows the termen from apex to tornus embracing the basal half of the pale cinereous cilia, which are also tipped with greyish fuscous, except on the lower third of the margin. Exp. al. 21—25 mm. Hindwings pale cinereous, with a broad mottled band following the outer margin; cilia pale cinereous. Abdomen greyish fuscous, sprinkled with cinereous, with two whitish lateral spots at the extreme base. Hind Legs pale cinereous, the tibiae slightly clouded.

Type ♂ (26060) *Molokai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Mts., 3000—4000 ft., X. 1895.—MOLOKAI: 3000 ft., 17 VI. 1893.—HAWAII: Kona, 4000 ft., 8 IX. 1892. Four specimens.

## II. PTEROPHORINA.

## 2. TRICHOPTILUS Wlsm.

Type *Trichoptilus pygmaeus* Wlsm. (Wlsm. 1880).

TRICHOPTILUS Wlsm., Pter. Cal.—Or. 62—3 (1880); Meyr., Tr. Ent. Soc. Lond. 1886, 7: 1890, 484—5; Tutt, Br. Nat. i. 252—3 [*reprint* 77—8] (1891); Meyr., HB. Br. Lp. 430—1 (1895); O. Hfm., Ber. NW. Ver. Regensb. v. 45, 49, 145—6, 206 (1896); Fern., Mass. Agr. Coll. Ann. Rp. xxxv. 95—6 [sep. 13—14] (1898).

3. (1) *Trichoptilus oxydactylus* Wkr. (Pl. X. fig. 3).

n. synn. = *hawaiiensis* Btl., = *centetes* Meyr.

*Pterophorus oxydactylus* Wkr., Cat. Lp. Ins. BM. xxx. 944 (1864)<sup>1</sup>. *Aciptilia hawaiiensis* Btl., Ann. and Mag. NH. (5.s.) vii. 408 (1881)<sup>2</sup>. *Aciptilia oxydactyla* Wlsm., Pr. Z. Soc. Lond. 1885, 885 (1886)<sup>3</sup>. *Trichoptilus centetes* Meyr., Tr. Ent. Soc. Lond. 1886, 16—17<sup>4</sup>: 1887, 266<sup>5</sup>. *Pterophorus oxydactylus* Moore, Lp. Ceyl. iii. 528—9, Pl. 209, 16 (1887)<sup>6</sup>. *Trichoptilus hawaiiensis* Meyr., Tr. Ent. Soc. Lond. 1888, 239<sup>7</sup>. *Pterophorus oxydactylus* Swinh. and Cotes, Cat. Moths Ind. 669, No. 4549 (1889)<sup>8</sup>. *Trichoptilus centetes* Wlsm., Pr. Z. Soc. Lond. 1891, 494—5, 542 (1892)<sup>9</sup>. *Trichoptilus oxydactylus* Wlsm., Pr. Z. Soc. Lond. 1896, 277<sup>10</sup>. *Trichoptilus centetes* Wlsm., Pr. Z. Soc. Lond. 1897, 56, No. 1<sup>11</sup>: Ent. Mo. Mag. xxxiv. 192 (1898)<sup>12</sup>.\*

“Antennae ochreous-whitish, with a dark fuscous line on back. Palpi brownish-ochreous mixed with whitish, second joint reaching middle of face. Head and thorax ochreous. Forewings cleft from middle, segments linear; veins 2 and 10 present; brownish-ochreous, first segment more or less suffused with fuscous; an obscure dark fuscous dot in disc at one-third, and another on first segment at base; some white scales indicating very obscure bands on both segments before middle and towards apex; cilia ochreous-brown, on costa spotted with white on bands, on lower margin of first segment with two or three white scales on bands and a white subapical spot followed by a small black scale-tooth, on upper margin of second segment with a small white spot before apex, on lower margin of second segment with white bars opposite bands, interspaces greyer, and with a small black almost apical scale-tooth. [Exp. al.] 14—16 mm. Hindwings cleft firstly from one-fourth, secondly from base, segments linear; rather dark fuscous; cilia light ochreous-fuscous, third segment with a small well-defined black scale-tooth on inner margin at three-fifths, and a fringe of white hair-scales between this and base. Abdomen ochreous mixed with ochreous-whitish, apex in male

\* The small numerals refer to the localities given in the paragraphs on this subject at the end of the description.

with a single moderate obliquely ascending hair-pencil. Legs white, longitudinally striped with blackish, posterior tibiae banded in middle and at apex with dark ochreous-fuscous.

♂♀ Six specimens. Closely allied to *T. centetes* and its group." Meyr., Tr. Ent. Soc. Lond. 1888, 239.

Types ♂♀ *oxydactylus* Wkr., Mus. Br.; *hawaiiensis* Btl., Mus. Br.; ♂ *centetes* Meyr., Mus. Meyr.

HAB. [? UNITED STATES—ARIZONA<sup>9,12</sup>, ? MEXICO<sup>9</sup>] WEST INDIES—ST CROIX, IV—V.<sup>11</sup>; ST THOMAS, III.<sup>11</sup>; ST VINCENT<sup>9,11</sup>. ARABIA—Aden<sup>10</sup>, Lahez<sup>10</sup>. INDIA—Poona<sup>3,8</sup>, IX., XII.<sup>3</sup>, Bombay<sup>8</sup>. CEYLON<sup>1,6,8</sup>. NEW GUINEA—Port Moresby, XI.<sup>4</sup>. QUEENSLAND<sup>5</sup>.

HAWAIIA<sup>7</sup>. OAHU: Waianae, IV. 1892 (only on the plains, Perkins).—MOLOKAI, V. 1893 (sea-level, Perkins).—MAUI: Uluolu (common on the sea-shore, Blackburn)<sup>2</sup>; Wailuku, 1894 (Perkins). Seven specimens.

### 3. PLATYPTILIA Hb.

PLATYPTILIA Hb., Verz. bek. Schm. 429 (1826)

= *AMBLYPTILIA* Hb., Verz. bek. Schm. 430 (1826)

= *PLATYPTILUS* Z., Is. 1841, 764; HS.; Wlgrn.

= § *CNAEMIDOPHORUS* Wlgrn., Vet. Ak. Hndl. III. (7) 10 (1859)

= *AMBLYPTILUS* Wlgrn., Vet. Ak. Hndl. III. (7) 13 (1859)

= *EUCNEMIDOPHORUS* Wlgrn., Ent. Tdsk. II. 96 (1881).

#### 4. (1) *Platyptilia fuscicornis* Z. (Pl. X. fig. 4).

n. syn. = \**cosmodactyla* Btl., Meyr. (nec Hb.).

*Platyptilia fuscicornis* Z., Hor. Soc. Ent. Ross. XIII. 460—2 (1877)<sup>1</sup>. *Amblyptilia cosmodactyla* (Hb.), var. Btl., Ann. and Mag. NH. (5. s.) VII. 407 (1881)<sup>2</sup>. *Platyptilia* \**cosmodactyla* Meyr., Tr. Ent. Soc. Lond. 1888, 240<sup>3</sup>.

"Antennis unicoloribus fuscis, fronte subconica; scutello atro, postice niveo-marginato; alis ant. cinereis, brunneo-conspersis, triangulo costali ante fissuram nigro, striga laciniarum albida, macula ante eam costali rufo-fusca; striola ciliorum digiti tertii nigra ante apicem. ♂.

Sehr ähnlich der ebenso grossen *Acanthodactyla*, aber ohne Schuppenzahn am Innenrande der Vorderflügel und mit blossem schwarzen Schuppenstreifen statt eines Zahnes in den Fransen der dritten Feder, ausserdem sogleich durch die einfarbig braunen, nicht hell geringelten Fühler zu erkennen.

Kopf hellbraungrau; Stirn ganz kurz kegelförmig. Taster um  $\frac{3}{4}$  Kopflänge hervorstehend, länglich dreieckig, auswärts braun, am Ende des 2ten Gliedes bandförmig grau; Endglied kurz, grau. Fühler unbehaart, gegen das Ende mit verlängerten und deutlich abgesetzten Gliedern, einfarbig bräunlich, ausser am ersten Drittel der

Unterseite, das wie die Unterseite des Wurzelgliedes weisslich ist. Rücken braungrau; die Gegend des Schildchens ist bis zu den Schulterdecken tief schwarzbraun, hinten breit schneeweiss eingefasst. Hinterleib schwächig, grau mit chokolatfarbenen Flecken; Bauch chokolatbraun, weisslich bestäubt und an den Seiten mit undeutlichen weissen Streifen; Analklappen ziemlich lang und schmal. Beine dünn. Die vordern an den Schenkeln braun mit weissen Fleckchen; Schienen auswärts ebenso, innen weiss und am Ende braun; Füsse weiss, an den Enden der zwei ersten Glieder braungrau, die Endglieder braun. An den Mittelbeinen: Schenkel weissgrau mit breitem, braunem Mittel- und Endband; Schienen weiss, am schwach verdickten Ende breit braun; Füsse weiss, an den 3 ersten Gliedern mit bräunlicher Spitze, das Endglied braun. Hinterbeine an Schenkeln und Schienen innen schmutzig weissgrau, die erstern auswärts braungrau, die letztern heller und hinter der Mitte, an der Wurzel der Mitteldornen und am Ende fleckartig braun; der Metatarsus bräunlich mit schmutzig weisslichem Basalviertel, die andern Glieder reinweiss, an den Enden braungrau. Alle Dornen sind klein, weiss, an Wurzel und Ende braun.

Vorderflügel  $4\frac{1}{2}$ ''' lang, ziemlich schmal, hinten erweitert mit fein gespitzter, etwas verlängerter Flügelspitze, hell schiefergrau, längs des Innenrandes bräunlich gefleckt, so dass die Grundfarbe in dünnen Querlinien die Flecke trennt. Vor der Spalte liegt ein dreieckiger, schwarzer Costalfleck, dessen ausgezogene Spitze bis unter die Spalte reicht; vor ihm ist der Vorderrand als schmale Linie schwarz und durch graue Pünktchen unterbrochen; hinter ihm ist eine kurze, schneeweisse Costallinie, auf welche eine oben schwarze, unten gelblichrothe, fleckartige Stelle folgt, die unterwärts einen dicken schwarzen Längsstrich führt; sie wird durch die weissliche Querlinie begrenzt, welche ein schwarzes Costalfleckchen hinter sich hat und sich durch den etwas bräunlichen Hinterzipfel verlängert. Fransen weisslich; am reinsten sind die des Innenrandes vor dem Innenwinkel; diese tragen dem Costaldreieck gegenüber drei starke, tiefschwarze Schrägstriche. Die Hinterrandfransen sind an ihrer Wurzel mit einer tiefschwarzen, am Vorderzipfel einmal, am Hinterzipfel zweimal unterbrochnen Linie durchzogen. Am Ende der Spalte sind die Fransen schwarz.

Hinterflügel dunkelgrau. Die Fransen um die Spitze der Federn sind an ihrer Wurzel als Linie braun. Die Innenrandfransen der dritten Feder sind von der Basis aus mit einer Reihe schwarzer Schuppen bestreut; vor der Spitze der Feder sind sie weisslich mit einem schwarzen, etwas schrägen Schuppenstrich und an der Spitze der Feder mit einem solchen Fleckchen.

Unterseite der Vorderflügel dunkel braungrau, auf dem umgeschlagenen Costaltheil weissbestäubt, hinter dem Anfang der Spalte mit einem weissen, vorn und hinten schwarz begrenzten Costalfleckchen. Die Zipfel mit einigen weissen Stäubchen, der vordere mit vollständiger, weisser Querlinie. Fransen weisser als oben, aber eben so scharf schwarz gezeichnet.—Die erste und dritte Feder der Hinterflügel sind verdunkelt, die erste am meisten vor der Spitze, so dass sich keine weisse Querlinie ausbildet. Die

Schuppen der Innenrandfransen der dritten Feder sind reichlicher, und der schwarze Streifen etwas länger als oben.

Ein schön erhaltenes ♂ am 23 Februar bei Bogotá gefangen in Gesellschaft der *Platyd. pyrrhina*." [Z. Hor. Soc. Ent. Ross. XIII. 460—2 (1877).]

Type ♂ Mus. Wlsm.

HAB. COLOMBIA: Bogotá, II<sup>1</sup>. HAWAIIA<sup>2</sup>. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Mts., 3000—4000 ft., V.—VI. 1894 (Perkins).—OAHU: Waianae Mts., 1600 ft. and upwards, *excl.* IV. 1892 (Perkins).—MOLOKAI: 4000 ft., VI. 1893 (Perkins).—LANAI: 2000 ft., II. 1894 (Perkins).—MAUI: Wailuku, IV. 1894 (Perkins); Haleakala, 2000 ft. (Blackburn)<sup>2</sup>.

Twenty-one specimens. Exp. al. 15—18 mm. "The larva was green or grey and hairy, the pupae were light or dark" (Perkins).

Bred at Oahu, but the food-plant was not identified.

##### 5. (2) *Platyptilia brachymorpha* Meyr. (Pl. X. fig. 5).

*Platyptilia brachymorpha* Meyr., Tr. Ent. Soc. Lond. 1888, 240—1<sup>1</sup>.

"Antennae fuscous. Palpi moderate (two), ochreous-brown, base and a median ring of second joint white, terminal joint mixed with white. Head and thorax light brown, thorax posteriorly ochreous-whitish. Forewings cleft from two-thirds, segments moderate, parallel-sided; light ochreous-brown, irrorated with white; costa rather dark fuscous, dotted with white; a rather large dark fuscous dot in disc before one-third, and another beneath costa before middle; a triangular dark fuscous blotch on costa about two-thirds, reaching half across wing, terminating in two transversely placed black dots before cleft, followed by an obscure whitish suffusion; a white line crossing both segments near hind margin, preceded in first segment by a large elongate black dot, in second by a small one, on costal margin of both segments by a dark fuscous suffusion, hind-marginal area beyond this fuscous; cilia of both segments on hind margin rather dark fuscous, slightly mixed with white, with a small scale-tooth at lower angle, on inner margin fuscous-whitish with a few scattered very small black scales. [Exp. al.] 14 mm. Hindwings cleft firstly from middle, secondly from before three-fourths; first segment moderately dilated, spatulate, second slightly dilated, its apex very long-pointed, its hind margin very oblique and concave; rather dark fuscous; cilia fuscous, third segment with a row of black scales on inner margin from base to middle, and one or two at four-fifths. (Abdomen broken.) Legs rather dark fuscous above, white beneath, tibiae not incrassated. ♂ (?). One specimen." Meyr. l. c.

Type Mus. Meyr.

HAB. HAWAIIA<sup>1</sup>. OAHU: Waialua, beach, III. 1892.—HAWAII: Kona, above 4000 ft., 12, VIII. 1892; Kaawaloa, above 2000 ft., IX. 1892 (Perkins). Six specimens.



6. (3) *Platyptilia rhynchophora* Meyr. (Pl. X. fig. 6).

=\**repletalis* Btl. (nec Wkr.)<sup>2</sup>.

*Platyptilia* \**repletalis* Btl., Ann. and Mag. NH. (5. s.) VII. 407 (1881)<sup>1</sup>. *Platyptilia rhynchophora* Meyr., Tr. Ent. Soc. Lond. 1888, 239—40<sup>2</sup>.

“Antennae dark fuscous. Palpi very long (four), rather dark fuscous, sprinkled with whitish above. Head and thorax rather dark fuscous, finely sprinkled with ochreous-whitish; frontal cone short. Forewings cleft from two-thirds, segments moderate, parallel-sided; fuscous, towards middle of disc and on costal and dorsal edges irrorated with blackish; an obscure cloudy dark fuscous dot in disc at one-fourth, and a second below costa at one-third; a cloudy blackish dot immediately before cleft, indistinctly extended to costa, where it is followed by some whitish scales; an indistinct dark fuscous bar extending across middle of both segments parallel to hind margin, anteriorly suffused, posteriorly margined by an obscure whitish line; cilia fuscous, slightly mixed with whitish, on hind margin with an obscure darker fuscous line, on inner margin with a few scattered black scales. [Exp. al.] 17—18 mm. Hindwings cleft firstly from middle, secondly from three-fourths, first and second segments moderately dilated; rather dark fuscous; cilia fuscous; third segment with a row of black scales on inner margin from base to middle, and one or two at three-fourths. Abdomen fuscous. Legs fuscous, beneath whitish, banded with dark fuscous, tibiae not incrassated.

♂ ♀. Three specimens. Immediately recognisable by the unusually long palpi.” Meyr., Tr. Ent. Soc. Lond. 1888, 239—40.

Type ♂ ♀ Mus. Meyr. (Paratype \**repletalis* Btl., Mus. Br.).

HAB. HAWAIIA<sup>2</sup>. KAUAI: Kaholuamano, 4000 ft., IV. 1895 (Perkins).—OAHU: Waianae Mts., 3000 ft., IV. 1892 (Perkins).—MOLOKAI: about 3000—4000 ft., 5—13, VI. 1893 (Perkins).—MAUI: Haleakala, 5000 ft., III—IV. 1894, V. 1896; 6000 ft., III. 1894, V. 1896; 7000 ft., IV. 1894; 9000 ft., IV. 1894; crater X. 1896 (Perkins).—HAWAII: Mauna Loa, 4000 ft. (Blackburn)<sup>1</sup>. Twenty-three specimens.

7. (4) *Platyptilia insularis*, sp. nov. (Pl. X. fig. 7).

Antennae brownish fuscous, dusted with whitish cinereous. Palpi extending more than the length of the head beyond it; brownish fuscous, sprinkled with whitish cinereous. Head and Thorax brownish fuscous, profusely dusted with whitish cinereous. Forewings pale chestnut-brown, sprinkled with dark chestnut-brown and transversely mottled with whitish cinereous; the costa, narrowly shaded with dark chestnut-brown as far as the base of the fissure, is evenly speckled with whitish cinereous, a broad shade extending downward to the base of the fissure before which it forms a dark patch; a triangular dark chestnut-brown costal patch on the middle of the upper lobe extends nearly to the fissure, its outer edge very obliquely and narrowly margined with white, a similar but

smaller patch occurring before the middle of the lower lobe but not reaching the dorsum, these patches are both preceded by thickly sprinkled whitish scales; cilia of the upper lobe whitish, with a dark line along their base; cilia of the lower lobe greyish brown, with a dark line along their base; a few dark spatulate scales lie in the cilia along the dorsum and there is some indication of a dark plical spot followed by another on the disc before the middle. Underside with a white costal spot above the base of the fissure succeeded by a slight sprinkling of whitish scales upon the upper lobe, the remainder of the wings being unsprinkled. Exp. al. 18—20 mm. Hindwings and cilia pale greyish brown, the dorsum of the posterior lobe thickly bestrewn with fuscous spatulate scales, not extending to its apex and forming no tooth-like projection. Underside sprinkled with a few white scales near the apex of the anterior lobe. Abdomen brownish fuscous, sprinkled with whitish cinereous, with a small whitish streak on either side near the base. Hind legs brownish fuscous, with diffused whitish bands round the terminal joints of the tarsi.

Type ♂ (26142) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft. IV. 1892.—MOLOKAI: above 3000 ft., 9—13, VI. 1893. Five specimens.

8. (5) *Platyptilia littoralis* Btl. (Pl. X. figs. 8—9).

*Platyptilus littoralis* Btl., Tr. Ent. Soc. Lond. 1882, 44—5<sup>1</sup>. *Platyptilia littoralis* Meyr., Tr. Ent. Soc. Lond. 1882, 241<sup>2</sup>.

Antennae cinereous. Palpi projecting more than the length of the head beyond it; dark fawn-brown. Forewings fawn-brownish, with a slight tawny tinge, traversed transversely by numerous whitish cinereous strigulae, of which those near the base are somewhat diffused; a large trapezoidal brownish fuscous costal spot extending to the fissure is followed by a whitish costal spot (in some varieties this reaches almost to the whitish subterminal line, in other varieties the ground colour of the wing almost obliterates the dark trapezoidal and whitish costal spots, the latter becoming a small whitish or pale tawny spot); an oblique whitish cinereous line, parallel with the termen, crosses both lobes, preceded on the tornal lobe by a broad brownish fuscous spot contiguous to it, and on the apical lobe by a smaller spot of the same colour below the middle of the lobe; the space between this line and the termen is brownish fuscous, traversed by minute lines of whitish cinereous scales; the costa is narrowly darker-shaded throughout, especially before the apex; cilia pale cinereous, shaded to their middle with brownish fuscous, forming a somewhat abrupt median line; within the fissure the cilia are cinereous, with the exception of two opposite dark spots at its outer extremity, the dorsal cilia are also pale cinereous, studded with blackish scales. Exp. al. 22 mm. Hindwings and cilia tawny, the posterior lobe thickly studded with blackish scales on its dorsum, these not reaching to the apex. Abdomen dark fawn-brown, with a black

spot surrounded by whitish on each side at the base. Legs dark fawn-brownish, with broad whitish bands around the middle of the spurs and on the three last tarsal joints; anterior tarsi whitish.

Type ♀ Mus. Br. (Caenotypes ♂ (25194); ♀ (25308) Mus. Wlsm.)

HAB. OAHU: nr. Honolulu (on shores of a small mountain lake. Blackburn)<sup>1</sup>.—HAWAII: Kona, 3000 ft. IX. 1892; 4000 ft., 17—21, VII. 12, VIII. 1—8, IX. 1892 (Perkins). Six specimens.

This species is somewhat variable, the markings tending to be obliterated by suffusion of the ground-colour. In well-marked forms it is at once recognisable by the dark trapezoidal (instead of triangular) costal spot.

### III. *ORNEODINA*.

#### 4. *ORNEODES* Ltr.

*ORNEODES* Ltr. [Préc. Gen. Ins. 148 (1796) *MN*], Hist. Nat. Crust. Ins. III. 418 (1802): XIV. 258 (1805).

= *RIPHIDOPHORA* Hb., Tent. 2 (1806).

= *EUCHIRADIA* Hb., Verz. bek. Schm. 431 (1826).

= \**ALUCITA* (L.) Z. Is. 1841 (†865—7), †867—9: Lin. Ent. vi. 405 (1852) &c.

#### 9. (1) *Orneodes angustestriata*, sp. nov. (Pl. X. fig. 10).

Antennae (broken). Palpi slightly recurved, terminal joint about as long as the median; ochreous, the median joint fuscous externally. Head and Thorax (denuded). Forewings dark brownish fuscous, the costal lobe with five transverse pale cinereous strigulae which are traceable throughout the other lobes, the outer three being bent outward on the costal edge of the third lobe; in the spaces before and behind the middle streak (which are wider than the other intervening spaces) the dark brown colour is slightly peppered with pale cinereous; cilia corresponding to the adjacent colour of the lobe. Exp. al. 11 mm. Hindwings with the pale strigulae more minute and more inclined to coalesce, leaving a moderately distinct dark band at two-thirds the wing-length, and a narrower one at one-third; cilia corresponding to the adjacent colour of the lobe. Abdomen (broken). Hind Legs whitish cinereous with four transverse fuscous tarsal bands above.

Type ♂ (26730) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. One specimen.

#### 10. (2) *Orneodes objurgatella*, sp. nov. (Pl. X. fig. 11).

Antennae slightly serrate toward the apex; pale cinereous with an ochreous tinge. Palpi short, recurved to the level of the vertex; whitish cinereous, the median joint

shaded with greyish fuscous externally, the terminal joint spotted with fuscous. Head and Thorax greyish cinereous. Forewings pale greyish fuscous, with narrow whitish cinereous streaks and speckling; on the costal lobe are four or five such pale transverse streaks, about equidistant from each other; the corresponding streaklets on the second lobe being a little beyond them; those on the third lobe corresponding with those on the second; those on the fourth, fifth, and sixth lobes receding towards the base; cilia corresponding to the colour of that portion of the lobe on which they rest. Exp. al. 9—11 mm. Headwings: no special pattern is traceable, the lobes being evenly speckled throughout with whitish cinereous and greyish brown, the cilia corresponding. Abdomen greyish cinereous. Legs cinereous, with whitish spots on the tarsal joints.

Type ♀ (25087) Mus. Wlsm.

HAB. OAHU: Mt. Kaala, Waianae Mts., 3000 ft., I. 1892; 2000 ft., IV. 1892  
Two specimens.

This is a smaller form than the ordinary *hexadactyla* L., but not easy to distinguish from it by any intelligible form of description.

#### IV. *TINEINA*.

##### I. GELECHIADAE.

##### 5. *ARISTOTELIA* Hb.

Type *Tinea decurtella* Hb., (Hb. 1826).

*ARISTOTELIA* Hb., Verz. bek. Schm. 424 (1826); Wlsm., Ent. Mo. Mag. xxxi. 42 (1895); Meyr., HB. Br. Lp. 572 (1895); Wlsm., Pr. Z. Soc. Lond. 1897, 63.

= *CHRYSOESTHIA* Hb., Verz. bek. Schm. 422 (1826) *partim*.

= §*EVAGORA* Clem., Pr. Ac. Nat. Sc. Phil. XII. 165 (1860).

{ = §*NOMIA* Clem., Pr. Ac. Nat. Sc. Phil. XII. 167 (1860).

{ = *CHRYSOPORA* Clem., Pr. Ac. Nat. Sc. Phil. XII. 362 (1860).

= *NANNODIA* Hein., Schm. Deutsch. Tin. 281 (1870).

= §*ARGYRITIS* Hein., Schm. Deutsch. Tin. 283 (1870).

= §*APODIA* Hein., Schm. Deutsch. Tin. 286 (1870).

= *ERGATIS* Hein., Schm. Deutsch. Tin. 295 (1870).

{ = §*DORYPHORA* Hein., Schm. Deutsch. Tin. 298 (1870).

{ = *XYSTOPHORA* Hein.—Wk., Schm. Deutsch. Tabelle Gattungen 6 (1876).

= *MONOCHROA* Hein., Schm. Deutsch. Tin. 308 (1870).

= §*LAMPROTES* Hein., Schm. Deutsch. Tin. 309 (1870).

##### 11. (1) *Aristotelia maculaticornis*, sp. nov. (Pl. XIII. fig. 17).

Antennae white, narrowly but distinctly barred with brownish fuscous above. Palpi white, with two broad fuscous bands around the median joint, the terminal joint ringed with fuscous before the apex. Head white. Thorax white, sprinkled with fuscous.

Forewings white, with brownish fuscous markings, all more or less broken up by the white ground-colour; a basal patch, broader on the dorsum than on the costa, a triangular costal patch before the middle, reaching to the fold, and an inverted costal patch before the apex reaching to the end of the cell; this points towards a few fuscous scales on the dorsum and is preceded on the costa by a similar group, others occurring about the apex and termen; cilia white, with a few fuscous scales about the apex. Exp. al. 20 mm. Hindwings, as broad as the forewings, bisinuate below the apex; pale cinereous; cilia white, with a slight ochreous tinge. Abdomen brownish fuscous. Legs whitish.

Type ♀ (28741) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Unique.

12. (2) *Aristotelia nigriciliella*, sp. nov. (Pl. XIII. fig. 18).

Antennae whitish ochreous, barred with blackish above. Palpi whitish ochreous, shaded with fuscous externally nearly to the apex of the median joint. Head and Thorax brownish cinereous, the tegulae mottled with brownish fuscous. Forewings brownish cinereous, with diffused shading of scattered brown and brownish fuscous scales, especially along the costa beyond the basal third, along the dorsum from the base to the tornus, and across the apical area; at one-third from the base an outwardly oblique chestnut-brown fascia runs from the costa to the fold, but scarcely reaches the dorsum (in some specimens this appears to be absent); cilia whitish ochreous. Exp. al. 17—22 mm. Hindwings shining, pale leaden grey; cilia pale greyish ochreous. Abdomen brownish cinereous. Legs whitish ochreous, with indistinct broad brownish-grey shade bands.

Type ♂ (28115); ♀ (27390) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (1) VII. 1895; (3) VIII. 1896; Olaa, 2000 ft., (1) XI. 1896. Five specimens.

The ♀ is larger and paler than the ♂, with the palpi more distinctly marked with dark shading on both joints. In the forewings there is no actual fascia, but somewhat more confluent mottling indicates its position; similar mottling occurs at the base of the dorsum and on the outer third. The specimen from Olaa (28658) is doubtfully referred to this species.

13. (3) *Aristotelia ichthyochroa*, sp. nov. (Pl. XIII. fig. 19).

Antennae shining, whitish cinereous. Palpi smooth, the terminal joint nearly as long as the median; whitish on their inner sides and above, fuscous externally. Head [denuded—apparently whitish cinereous]. Thorax fuscous, the tegulae tipped with whitish cinereous. Forewings rather shining, whitish cinereous, but showing a slight ferruginous reflection in certain lights; a broad triangular ferruginous costal blotch, commencing at one-fourth, descends outward to the middle of the fold and is thence

diffused upward to the commencement of the costal cilia, a few dark ferruginous scales about the apex and termen precede the leaden grey cilia which have also in some lights a reddish brown reflection; underside fuscous. Exp. al. 16 mm. Hindwings as broad as the forewings, the termen obliquely bisinuate below the obtuse apex; dark brownish grey; cilia brownish grey; underside dark leaden grey. Abdomen ferruginous at the base, fuscous beyond. Legs with the hind tibiae hairy; pale cinereous, shaded with greyish fuscous externally.

Type ♂ (26398) Mus. Wlsm.

HAB. MOLOKAI: Woods above Pelekunu, 27. VIII. 1893. Unique.

14. (4) *Aristotelia epermeniella*, sp. nov. (Pl. XIII. fig. 20).

Antennae fuscous, with pale annulations. Palpi fuscous, with the end of the median joint and the base and apex of the terminal joint pale fawn-ochreous. Head greyish ochreous. Thorax pale greyish fuscous. Forewings pale fawn-ochreous, sprinkled and shaded with rust-brown and fuscous, the latter predominating in three sprinkled dorsal patches below the fold and slightly indicated along the middle of the costa; the former prevailing, in a short basal patch above the fold, in a strong outwardly oblique shade from the costa at one-fourth, reaching to the fold on the outer edge of an ill-defined oblique fascia of the paler ground-colour and thence in mottled sprinkling over the remaining wing-surface to the apex; cilia very pale fawn-ochreous, slightly mottled along their base with fuscous. Exp. al. 16 mm. Hindwings bisinuate below the apex; greyish; cilia pale fawn-ochreous. Abdomen greyish ochreous. Legs pale fawn-ochreous.

Type ♀ (27671) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Unique.

15. (5) *Aristotelia notata*, sp. nov. (Pl. XIII. fig. 21).

Antennae whitish ochreous. Palpi whitish ochreous, the median joint sprinkled externally with blackish scales nearly to its apex. Head and Thorax whitish ochreous. Forewings whitish ochreous; a small blackish spot at the extreme base of the costa, a larger diffused spot on the fold near its base, a triangular costal patch before the middle, its apex reaching to the fold, a patch at the end of the cell and a smaller one on the costa before the apex with a series of almost connected blackish spots in the whitish ochreous terminal and costal cilia. Exp. al. 14 mm. Hindwings trapezoidal, shining, pale rosy grey; cilia greyish, with a slight ochreous tinge. Abdomen brownish grey. Legs whitish ochreous.

Type ♀ (26218) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 5. VI. 1893; 4500 ft., 17. IX. 1893. Two specimens.

16. (6) *Aristotelia lanaiensis*, sp. nov. (Pl. XIII. fig. 22).

Antennae pale cinereous, faintly banded with fuscous above. Palpi with the median joint fuscous, the shorter terminal joint pale cinereous, with three small fuscous dots externally. Head and face ash-grey. Thorax whitish cinereous. Forewings ashy whitish, sparsely sprinkled with pale brownish fuscous, a small dark fuscous spot at the base of the costa is succeeded by a triangular fuscous costal patch, scarcely before the middle, and a few fuscous scales about the commencement of the costal cilia; cilia pale brownish cinereous. Exp. al. 11 mm. Hindwings bisinuate below the apex; ashy grey; cilia pale brownish grey. Abdomen greyish. Legs pale whitish ochreous.

Type ♂ (26514) Mus. Wlsm.

HAB. LANAI: 2000 ft., VII. 1894. Unique.

17. (7) *Aristotelia elegantior*, sp. nov. (Pl. XIII. fig. 23).

Antennae cinereous, barred above with fuscous. Palpi cinereous, the median joint fuscous nearly to its apex, the terminal joint tipped with fuscous and shaded beneath with the same before the apex. Head and Thorax greyish cinereous. Forewings cinereous, slightly suffused with grey along the dorsum and toward the apex; a large brown costal blotch before the middle, terminating in a bright ferruginous patch on the fold; this is followed by two spots, one before, the other at the end of the cell, brown on their upper half, bright ferruginous beneath; some pale cinereous mottling extends around the apex on the costa and termen; cilia brownish ochreous. Exp. al. 13 mm. Hindwings greyish; cilia brownish grey, with a slight ochreous tinge. Abdomen dull brownish grey. Legs brownish cinereous, with fuscous shades along the spurs and at the joints of the tarsi externally.

Type ♂ (25700) Mus. Wlsm.

HAB. OAHU: Near head of Kawaihoa Gulch, IV. 1893. Unique.

This species is very distinct, otherwise it would not have been worth describing from a mutilated specimen.

18. (8) *Aristotelia mendax*, sp. nov. (Pl. XIII. fig. 24).

Antennae fawn-ochreous, narrowly banded above with fuscous. Palpi fawn-ochreous, each joint annulate before the apex and clouded beneath with fuscous, the extreme apex fuscous. Head and Thorax fawn-ochreous. Forewings pale fawn-ochreous, profusely sprinkled and minutely mottled with fawn-brown, almost obliterating the paler ground-colour, a few blackish specks along the costa, especially before the middle; cilia fawn-ochreous mottled with fawn-brown along their base. Exp. al. 10—12 mm. Hindwings bisinuate below the apex; pale grey; cilia brownish cinereous. Abdomen greyish, anal tuft fawn-ochreous. Legs whitish ochreous, the spurs fuscous externally.

Type ♂ (27586) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (2) iv. 1895; Halemanu, 4000 ft., (1) v. 1895; Mts., 3000—4000 ft., (1) vi. 1894. Four specimens.

19. (9) *Aristotelia arcuata*, sp. nov. (Pl. XIII. fig. 25).

Antennae whitish ochreous, clouded and spotted with fuscous toward the apex. Palpi whitish ochreous, the median joint dark fuscous, except at its base and apex, the terminal joint tipped with fuscous. Head and Thorax whitish ochreous. Forewings with the costa much arched, apex acute, termen very oblique; whitish ochreous, gradually suffused from one-third with dull olive-brown, leaving a tornal, and a smaller opposite costal patch of the pale ground-colour; a minute dark spot is visible in the fold a little beyond its middle; cilia very pale ochreous. Exp. al. 12 mm. Hindwings and cilia brownish grey. Abdomen greyish fuscous. Legs pale brownish ochreous.

Type ♂ (25066) Mus. Wlsm.

HAB. OAHU: Waianae Mts, 3000 ft., iv. 1892. Unique.

6. MERIMNETRIA, gen. nov.

(μεριμνήτρια = one who is over careful about).

Type *Merimnetria flaviterminella* Wlsm.

Antennae (1), widening beyond the base, the stem wide, slightly flattened; serrate towards the apex. Maxillary Palpi absent. Labial Palpi recurved to above the vertex; smooth; terminal joint not longer than the median. Haustellum present. Ocelli absent. Head and Thorax smooth. Forewings five times as long as broad, the margins parallel until tapering off to the lanceolate apex: neuration, 11 veins (7 and 8 coincident to costa); 2 and 3 separate. Hindwings as broad as the forewings; termen sinuate below the apex; cilia longer than the width of the wing: neuration, 8 veins; 3 and 4 connate, 6 and 7 remote, but somewhat approximating towards base. Abdomen flattened. Legs, hind tibiae somewhat hairy above.

This genus should be placed in the neighbourhood of *Strobisia* Clms. and *Drepanoterma* Wlsm. It may be separated from both by its antennae, which are not ciliate as in the latter, and they are longer and stouter than in the former; both these genera differ also in having veins 2 and 3 of the forewings stalked. The uncate termen of the forewings in *Drepanoterma* and the stalking of veins 6 and 7 of the hindwings in *Strobisia* are other points of distinction.

20. (1) *Merimnetria flaviterminella*, sp. nov. (Pl. XIII. fig. 26).

Antennae and Palpi fuscous. Head and Thorax fuscous, the latter with some chocolate-brown scales. Forewings chocolate-brown, with fuscous suffusion, especially



at the base and along the costa and fold; a few steel-grey scales scattered about the end of the cell and beyond it, also about the middle of the fold; costal and tornal cilia greyish fuscous, terminal cilia pale ochreous. Exp. al. 11 mm. Hindwings bisinuate below the apex; brownish fuscous, cilia tawny greyish fuscous. Abdomen fuscous. Legs greyish.

Type ♂ (28611) Mus. Wlsm.

HAB. HAWAII: Hilo, 2000 ft., 1. 1896. Unique.

## 7. PHTHORIMAEA Meyr.

Type *Gelechia* (? *Bryotropha*) *operculella* Z. (Meyr. 1902).

PHTHORIMAEA Meyr., Ent. Mo. Mag. xxxviii. 103—4 (1902).

### 21. (1) *Phthorimaea operculella* Z. (Pl. XIII. fig. 27).

=*solanella* Bdv.<sup>44</sup>; =*terrella* Wkr.<sup>25</sup>; =*tabacella* Rag.<sup>21</sup>; =*\*piscipellis* Howard (nec Z)<sup>43</sup>. n. syn. = *sedata* Btl.

[On the Potato Grub of Tasmania. Berthon, *Papers and Pr. Roy. Soc. Van Diemen's Land* III. 76—89 (1855)<sup>1</sup>.] *Gelechia terrella* Wkr., Cat. Lp. B.M. xxx. 1024 (1864)<sup>2</sup>. *Gelechia* (? *Bryotropha*) *operculella* Z., Verh. Z.B. Ges. Wien, xxiii. (1873) Abh. 262—3, Pl. III. 17 (1873)<sup>3</sup>. *Bryotropha solanella* J.B., Soc. Centr. Hort. (xi. 1874)<sup>4</sup>; Rag., Bull. Soc. Ent. Fr. XLIV. (5. s. v. 1875) xxxv.—vii. (1875)<sup>5</sup>; *Bull. Soc. d'Acclimat.* (3. s.) II. 223—9 (1875)<sup>6</sup>; Bdv., *Bull. Soc. d'Acclimat.* (3. s.) II. 272—3 (1875)<sup>6</sup>; Rivière, J.B., *Soc. Centr. Hort.* 1876, 473—84<sup>7</sup>; (= sep. 1—12) (1876)<sup>8</sup>; .....*Deutsch. landw. Presse* III. 606 (1876)<sup>9</sup>; .....*Rev. Sc. Nat. Montpellier* ..... (ix. 1876)<sup>10</sup>. *Gelechia operculella* Chamb., Bull. U.S. G.G. Surv. IV. 145 (1878)<sup>11</sup>. *Lita solanella* Meyr., Pr. Lin. Soc. N.S.W. IV. 112—14 (vi. 1879)<sup>12</sup>; Ent. Mo. Mag. XVI. 66 (viii. 1879)<sup>13</sup>. *Gelechia* (*Lita*) *solanella* Rag., Bull. Soc. Ent. Fr. XLVIII. (5. s. ix. 1879) cxlvi.—vii. (1880)<sup>14</sup>. *Gelechia tabacella* Rag., Bull. Soc. Ent. Fr. XLVIII. (5. s. ix. 1879) cxlvi.—vii. (1880)<sup>15</sup>. *Gelechia* (*Bryotropha*) *solanella*, *Jr. d'Agr. pratique* XLIV. T. 1, 339—42, fig. (1880)<sup>16</sup>. *Gelechia sedata* Btl., Cist. Ent. II. 560, No. 88 (1880)<sup>17</sup>. *Parasia sedata* Btl., Ann. and Mag. N.H. (5. s.) VII. 399, No. 86 (1881)<sup>18</sup>. *Lita solanella* Tepper, *Tr. and Pr. Roy. Soc. S. Austral.* IV. 57—60, 154 (1882)<sup>19</sup>. *Parasia sedata* Meyr., Ent. Mo. Mag. XX. 35 (1883)<sup>20</sup>. *Lita solanella* (= *tabacella* Rag.) Oliv., Bull. Soc. Ent. Fr. LIV. (6. s. v. 1885) cxi.—xii. (x. 1885)<sup>21</sup>. *Lita tabacella* Rag., Bull. Soc. Ent. Fr. LIV. (6. s. v. 1885) cxi.—xii. (x. 1885)<sup>22</sup>. *Lita solanella* Rag., Bull. Soc. Ent. Fr. LIV. (6. s. v. 1885) cxi.—xii. (x. 1885)<sup>23</sup>. *Gelechia solanella* Meyr., N.Z. Jr. Sc. II. 590 (xi. 1885)<sup>24</sup>; Tr. N.Z. Inst. XVIII. 166—7, No. 6 (1886)<sup>25</sup>. *Lita solanella* Meyr., Tr. Roy. Soc. S. Austral. VIII. 13 (1886)<sup>26</sup>; Tryon, *Rp. Ins. and Fungus Pests Queensld.*

1. 175—81 (1889)<sup>27</sup>. *Litha solanella* Alph., Mem. Lp. Rmff. v. 231, No. 56 (1889)<sup>28</sup>. ["*Small Tineid*" Koebele, U.S. Dp. Agr. Div. Ent. Bull. xxi. 25 (1890)<sup>29</sup>. *Lita solanella* Olliff, Agr. Gaz. N.S.W. II. 158—9 (1891)<sup>30</sup>; [Riley and Howard], U.S. Dp. Agr. Div. Ent. Ins. Life IV. 239—42, fig. 27 *a—l* (IV. 1892)<sup>31</sup>; Rbl., Ann. K.K. Hofmus. VII. 274—5, 282, No. 57 (1892)<sup>32</sup>; Olliff, Agr. Gaz. N.S.W. III. 701—3, figs. *a—l* (IX. 1892)<sup>33</sup>; 828—9 (X. 1892)<sup>34</sup>; Wight, U.S. Dp. Agr. Div. Ent. Ins. Life V. 163—4 (I. 1893)<sup>35</sup>; Riley, *Ann. Rpt. U.S. Dp. Agr.* 1892.....(1893)<sup>36</sup>; Riley and Howard, U.S. Dp. Agr. Div. Ent. Ins. Life VI. 275—6 (II. 1894)<sup>37</sup>; Rbl., Ann. K.K. Hofmus. IX. 18, 89, No. 171 (1894)<sup>38</sup>; XI. 127, Nos. 191, 146, 190 (1896)<sup>39</sup>. *Gelechia \*piscipellis* [Howard], U.S. Dp. Agr. Div. Ent. Bull. VII. (n. s.) 76 (1897)<sup>40</sup>; McCarthy, *N. Car. Agr. Exp. Stn. Bull.* CXLI. 133—5, fig. (1898)<sup>41</sup>; Quaintance, *Florida Agr. Exp. Stn. Bull.* XLVI.....(1898)<sup>42</sup>. *Gelechia solanella* Howard, Yearbook U.S. Dp. Agr. 1898, 137—40, figs. 20—21 (1899)<sup>43</sup>; U.S. Dp. Agr. Farm. Bull. CXX. 19—22, figs. 14—15 (1900)<sup>44</sup>; Busck, U.S. Dp. Agr. Div. Ent. Bull. XXII. (n. s.) 89 (1900)<sup>45</sup>. *Gelechia (Lita) solanella* Stgr. and Rbl., Cat. Lp. Pal. II. 146, No. 2636 (1901)<sup>46</sup>. *Phthorimaea operculella* Meyr., Ent. Mo. Mag. XXXVIII. 103—4 (1902)<sup>47</sup>.

[N.B. References printed in italics have not been verified.]

Types ♂♀ *terrella* Wkr., ♂ Mus. Br.; *operculella* Z., ♂♀ Mus. Wlsm.; *solanella* Bdr., Mus. Bdr.<sup>5</sup>; *tabacella* Rag., Mus. Paris; *sedata* Btl., ♂ Mus. Br.

Antennae brownish cinereous. Palpi cinereous, with two umber-brown patches on the median joint externally, a spot of the same on the base of the terminal joint and a broad band before its apex. Head brownish cinereous; face pale cinereous. Thorax brownish cinereous, with three smoky brown longitudinal lines above. Forewings dull buff-brown, shaded and spotted with dark smoky brown; this forms a dorsal shade below the fold, a terminal shade reverting around the apex, and a spot at the end of the cell from which narrow lines radiate outward along the veins; there are also two spots near the base of the costa, the first succeeded by another below and beyond it, the second followed by one on the cell and one on the fold in an oblique line, a pair of smaller spots lying beyond this line on the cell, also in oblique succession; cilia pale buff-brownish, sprinkled along their base with smoky brown. Exp. al. 15—16 mm. Hindwings pale grey; cilia pale brownish ochreous. Abdomen and legs brownish cinereous.

Caenotype ♂ (25812) Mus. Wlsm.

HAB. EUROPE: SPAIN<sup>23, 32, 38, 46</sup>; CATALONIA<sup>23, 32, 38, 46</sup>; Barcelona<sup>23, 32</sup>. AFRICA: ALGERIA<sup>4-5, 12-16, 21-3, 25, 31-3, 38, 43-4, 46-7</sup>; El-Bear<sup>4-5</sup>, Hussein Dey<sup>15</sup>, Jemmapes<sup>23</sup>, Mondovi<sup>21, 23</sup>. CANARIES<sup>28, 32, 38-9, 46</sup>; TENERIFE<sup>28, 32, 38-9</sup>; Orotava<sup>28, 32</sup>; FUERTEVENTURA<sup>32, 38-9</sup>; Rio Palma. WEST INDIES<sup>45</sup>: PORTORICO<sup>45</sup>. UNITED STATES<sup>3, 11, 29, 31, 33, 35, 37, 39-44, 46-7</sup>; VIRGINIA<sup>43-4</sup>; Pennsylvania Co.<sup>43-4</sup>; N. CAROLINA<sup>40-1, 43-4</sup>; S. CAROLINA<sup>43-4</sup>, Sandy Run (Lexington Co.)<sup>43-4</sup>; FLORIDA<sup>42-4</sup>; TEXAS<sup>3, 37</sup>, Fredricksburg<sup>37</sup>; CALIFORNIA<sup>29, 31, 33, 35, 37, 39</sup>, Bakersfield (Kern Co.)<sup>31</sup>,

San Francisco<sup>37</sup>. HAWAIIA. KAUAI: Mts., 3000—4000 ft., v—vi. 1894 (Perkins).—MOLOKAI: sea-level, v. 1893; 3000 ft., and upwards 6—16 ix. 1893 (Perkins).—HAWAII: Kawaihae, sea-shore (Blackburn)<sup>18</sup>; Kona, 3000 ft., vi. 1892, 5000 ft., 4. vii. 1892, 4000 ft., 21. vii—11. ix. 1892 (Perkins). Thirty-six specimens. AUSTRALIA<sup>1-2, 12, 19, 26-7, 30-1, 33, 39, 43-4, 46-7</sup>; QUEENSLAND<sup>2, 27, 31</sup>; Moreton Bay<sup>2</sup>, Toowoomba<sup>27, 31</sup>; N. S. WALES<sup>12, 30, 33</sup>; Canley Vale<sup>30</sup>, Cullinga<sup>30</sup>, Hunter River<sup>12</sup>, Shoalhaven<sup>12</sup>, Sydney<sup>12</sup>, Tamworth<sup>33</sup>; VICTORIA<sup>12</sup>; Melbourne<sup>12</sup>; TASMANIA<sup>1, 31, 33, 39</sup>; S. AUSTRALIA<sup>19, 26, 31</sup>; Adelaide<sup>19, 26, 31</sup>. NEW ZEALAND<sup>17, 24-5, 29-31, 33, 35, 39, 43-4, 47</sup>; Taranaki<sup>24-5</sup>, Napier<sup>24-5</sup>.

LARVA. *Lycopersicum esculentum* (tomato) mining leaves<sup>42-4</sup>. *Nicotiana tabacum* (tobacco) mining leaves<sup>15, 21-2, 30, 32, 34, 40</sup>; in stems<sup>33-4</sup>. *Solanum carolinense* (horse nettle) mining leaves<sup>41, 43-4</sup>. *Solanum melongena* (egg plant) mining leaves and boring in fruit<sup>42-4</sup>. *Solanum tuberosum* (potato) in shoots and mining down stem into tubers<sup>4-5, 33-4</sup>; in tubers<sup>12, 14, 21, 23-5, 31-5, 43-4</sup>; mining leaves<sup>31, 34</sup>.

*Typha angustifolia* in heads<sup>23</sup> [most improbable that these were larvae of *Phthorimaea operculella* Z, they probably = *Scieropepla typhicola* Meyr., and possibly also *Limnaecia phragmitella*, Stn.] II<sup>12, 33</sup>, V<sup>21-3, 43-4</sup>, VI—IX<sup>43-4</sup>, X—XI<sup>31, 43-4</sup>.

IMAGO. I—III<sup>25</sup>, IV<sup>25, 32</sup>, V<sup>21, 33</sup>, VI—VII (Perkins), VIII<sup>3</sup>, IX—X<sup>32</sup>, X<sup>25, 31, 33</sup>, XII<sup>25, 31</sup>.

The oldest known name for this species is *Gelechia terrella* Wkr. (1864), but this is homonymous with *Gelechia terrella* (Schiff.) Wkr. Cat. Lp. Ins. BM. xxix. 573, No. 57 (1864).

## 8. STOEBERHINUS Btl.

Type *Stoeberhinus testaceus* Btl. (Btl. 1881).

STOEBERHINUS Btl., Ann. and Mag. NH. (5 s.) vii. 402, 401, fig. 2 (1881), Wlsm., Tr. Ent. Soc. Lond. 1887, 140, 171—2.

Antennae ( $\frac{2}{3}$ ) simple. Maxillary Palpi short, dependent. Labial Palpi: ♂ long, strongly recurved over the thorax; the basal joint reaching nearly to the top of the head, smooth, or with a few projecting scales above at its apex; the median joint three times the length of the basal, strongly bent over, smooth; the terminal joint shorter than the median, with a strong brush of long hair-scales on its inner edge: ♀ smooth, recurved to above the vertex, the median and terminal joints of about equal length, the latter tapering, acute, more slender than the former; the basal joint not abnormally developed. Haustellum long, scaled. Head with appressed scales. Thorax smooth. Forewings (in form similar to those of *Depressaria* Hw.), apex obtuse, termen slightly oblique, not sinuate: neuration 11 veins (7 and 8 coincident, to costa); 2 and 3 stalked. Hindwings as broad as the forewings, termen slightly sinuate: neuration 8 veins; 6 and 7 stalked, connate, or approximate; 3 and 4 connate, or short stalked; 5 moderately straight. Abdomen somewhat flattened. Legs, hind tibiae smooth.

Closely allied to *Autosticha*, Meyr. (=§ *Automola*, Meyr.), from which it differs in the extraordinary palpi of the ♂. Butler described the palpi of the ♀ as porrect; this is incorrect, they are recurved.

**22.** (1) *Stoeberhinus testaceus* Btl. (Pl. XIII. fig. 28).

*Stoeberhinus testaceus* Btl., Ann. and Mag. NH. (5 s.) VII. 401 fig. 2, 402—3 no. 73 (1881)<sup>1</sup>; Wlsm., Tr. Ent. Soc. Lond. 1887, 171—2<sup>2</sup>.

Antennae cinereous, or pale ochreous, showing faint annulations in the darker forms; basal joint brownish cinereous. Palpi: ♀ pale cinereous, sprinkled with brownish scales, a pale ring around the apex of the median joint: ♂ with the terminal brush dark brown. Head and thorax brownish cinereous. Forewings pale brownish cinereous, varying to pale ochreous, profusely sprinkled with dark brownish scales, a small dark brownish spot at the extreme base of the costa and a similar opposite spot close to the base of the dorsum; in the fold before its middle is an elongate chestnut-brown spot, another on the disc a little above and beyond it, a third in the same oblique line about the middle of the costa, and a fourth at the end of the cell; a slight chestnut-brown shade along the termen preceding the pale brownish cinereous cilia. Exp. al. 14—16 mm. Hindwings and cilia pale brownish grey, a slender line along the base of the latter inclining to ochreous. Abdomen pale brownish cinereous. Legs somewhat paler.

Type ♂ (73: 81—7) ♀ Mus. Br.; Caenotype ♀ (26242); ♂ (25030) Mus. Wlsm.

HAB. HAWAIIA. KAUAI: Makaweli, sea-level, VI. 1894 (Perkins). — OAHU: Honolulu (Blackburn)<sup>1-2</sup>, 29. VIII. 1882 (Meyrick); Waianae Mts., 1500 ft., IV. 1892, "on tree-trunks and rocks common, also I think on the plains and even in Honolulu" (Perkins), 3000 ft., IV. 1892, "beaten from dead wood" (Perkins). — MOLOKAI: sea-level, V. 1893. — HAWAII: Kona, 1500 ft., IX. 1892, "at light" (Perkins), Kaawaloa (Kona), 1500 ft., IX. 1892 (Perkins); Olaa, 2000 ft., XI. 1896 (Perkins). Twenty-eight specimens. E. PACIFIC. MARQUESAS IS.: Faton-Hiva Id. (1) 10—11, III. 1883, "beaten out of Pandanus thatch" (J. J. Walker); Taou-ata, Id. (3) 12. III. 1883 (J. J. Walker). Four specimens.

The series varies much in the extent of the brown scaling on the forewings, which in some cases becomes almost a complete suffusion of the wing-surface through which the spots are less distinctly visible, while in others it is almost confined to the region of the fold leaving the spots plainly apparent.

**9.** AUTOSTICHA, Meyr.

Type ♂ *Automola pelodes* Meyr. (Meyr. 1886).

§ AUTOMOLA, Meyr., Ent. Mo. Mag. xx. 34 (1883) = AUTOSTICHA, Meyr. Tr. Ent. Soc. Lond. 1886, 281.

"Antennae rather stout, slightly serrate, simple, basal joint moderate, simple. Maxillary palpi rudimentary, short, drooping. Labial palpi moderately long, recurved; second joint broadly thickened with dense appressed scales; terminal joint somewhat shorter than second, rather stout acute. Tongue long. Head smooth. Thorax smooth. Forewings elongate; with eleven veins, 2 and 3 stalked from just before angle of cell, 7 to costa. Hindwings trapezoidal, as broad as the forewings, hind margin markedly sinuate beneath apex, cilia moderate ( $\frac{2}{3}$ ); with eight veins, 3 and 4 stalked from angle of cell, 6 and 7 stalked. Abdomen moderate, distinctly margined. Legs: posterior tibiae with dense appressed hairs.

Doubtless allied to the two preceding genera" [*Thyrocopa*, Meyr. and *Synomotis*, Meyr.]: "but differing from them and almost the whole family in the possession of only eleven veins in the forewings, this exceptional structure is evidently due to the coalescence of the normal veins 7 and 8, which coincide for their whole length, instead of for a portion only." Meyr.<sup>1</sup>

**23.** (1) *Autosticha pelodes* Meyr. (Pl. XIV. fig. 1).

*Depressaria* \**convictella* Btl., Ent. Mo. Mag. xiv. 50, no. 39 (1877)<sup>1</sup>. *Automola pelodes* Meyr., Ent. Mo. Mag. xx. 34—5 (1883)<sup>2</sup>. *Autosticha* [*pelodes*] Meyr., Tr. Ent. Soc. Lond. 1886, 281<sup>3</sup>.

"Head, palpi, antennae, thorax, abdomen, and legs whitish ochreous, thinly sprinkled with fuscous; second joint of palpi externally densely irrorated with dark fuscous, terminal joint with a slender blackish median ring. Forewings moderately elongate, costa moderately arched, apex obtuse, hind-margin obliquely rounded; whitish ochreous, somewhat suffused with ochreous, and thinly sprinkled with dark fuscous; a blackish dot at base of costa; a small blackish dot in disc before middle, a second rather obliquely beyond it on fold, and a third more conspicuous in disc beyond middle; a row of blackish dots between veins on hind margin and apical fourth of costa; cilia whitish ochreous sprinkled with fuscous. Exp. al. 15 mm. Hindwings whitish ochreous slightly greyish tinged; cilia whitish ochreous." Meyr.<sup>1</sup>

Type ♂ Mus. Meyr.

HAB. HAWAIIA<sup>2</sup>. OAHU: Honolulu<sup>1</sup>.

This species was not met with by Mr Perkins.

"This is the species considered by Mr Butler to be synonymous with the Australian *convictella* Walk. It would be alike unexpected and interesting to find any species native to both Australia and the Hawaiian Islands; but as a matter of fact, *convictella*, Walk., belongs to the genus *Eulechria* in the *Oecophoridae*, and differs from the above in almost every point of structure; nor is there even any close superficial resemblance." Meyr.<sup>1</sup>

## 10. HODEGIA, gn. n.

(ὁδὴγία = guidance).

Type ♀ *Hodegia apatela* Wlsm.

Antennae (♀) as long as the forewings, simple. Maxillary Palpi short, meeting at the base of the haustellum. Labial Palpi recurved, 5 times the length of the head; terminal joint acute, almost as long as the median, median joint with appressed scales. Haustellum long, scaled at the base. Ocelli absent. Head (denuded). Thorax smooth. Forewings bulging at the base, acutely lanceolate, termen and dorsum obliquely receding to flexus, tornus obsolete: neuration 11 veins (4 absent, probably coincident with 3); 7 and 8 stalked for the greater part of their length, 7 to costa immediately above apex; 5 approximating to 3+4; veins 2—10 closely packed in the contracted apical portion of the wing; fork of vein 1 very long (almost  $\frac{1}{2}$ ). Hindwings triangular, acute: neuration 8 veins; 3 and 4 stalked, 6 and 7 stalked; 5 straight, slightly approximated to 3+4; 2—7 closely packed in the contracted apical portion of the wing; 8 connected with cell by cross-vein. Abdomen robust, almost as long as the forewings, ovipositor extruded. Legs: hind tibiae with appressed scales, but slightly rough-haired above; spurs well developed.

Though resembling *Chimabacche* Hb. in appearance this genus belongs to the *Gelechiadae* and to the same group as *Thyrocopa*, Meyr. It is to be regretted that we are unacquainted with the ♂.

24. (1) *Hodegia apatela*, sp. nov. (Pl. XIV. fig. 2).

Antennae greyish fuscous, dusted with white scales. Palpi hoary white, dusted with brownish scales. Head hoary greyish. Thorax greyish fuscous, the tegulae tipped with stone-whitish. Forewings brownish cinereous, sprinkled with whitish scales, especially about the costa and apex; a streak of black scaling commencing upon the middle of the disc runs nearly to the apex, a similar streak commencing at the base extends along the fold to its outer end, a patch of blackish scales beneath the base of the costa and another at the flexus. Exp. al. 23 mm. Hindwings pale cinereous. Abdomen brownish grey. Legs brownish grey, sprinkled with pale cinereous.

Type ♀ (28447) Mus. Wlsm.

HAB. MAUI: Haleakala, 9500 ft., v. 1896. Unique.

The single female has much the appearance of *Chimabacche fagella*, Schiff., but differs in neuration. It is in poor condition, but is certainly distinct from any known species.

Perkins, Ent. Mo. Mag. xxxii. 195 (1896) mentions this specimen thus: "A large Tineid with reduced wings and incapable of flight is shaken from a grass tuft above 9000 feet" [on Haleakala].

**11.** PTYCHOTHRIX, gen. nov.

(πρύξ=a fold; θρίξ=a hair).

Type *Ptychothrix vagans* Wlsm.

Antennae bipectinate (3), the pectinations diminishing in length outwardly, each pectination biciliate. Labial Palpi smooth, recurved to above the vertex, terminal joint shorter than the median. Maxillary Palpi short. Haustellum moderate. Head and Thorax smooth. Forewings suborate, lanceolate, apex depressed, termen very oblique: neuration 12 veins; 7 and 8 stalked, 7 to costa. Hindwings broader than the forewings, apex slightly depressed, termen slightly sinuate near the apex; ♂ with a tuft of hairs, in a depressed fold, from the base of the costa: neuration 8 veins; 3 and 4 shortly stalked, 5 bent over towards origin of 3+4, 6 and 7 stalked. Abdomen somewhat slender; anal appendages elongate, conspicuous. Legs rather coarsely scaled, but smooth.

Allied to *Thyrocopa* Meyr., and *Cryptophaga* M'Leay, differing from the former in the bipectinate antennae and from the latter by possessing a costal tuft on the hindwings of the ♂.

**25.** (1) *Ptychothrix vagans*, sp. nov. (Pl. XIV. fig. 3).

Antennae cinereous, inclining to ochreous. Palpi dark brown nearly to the apex of the median joint, thence fawn-ochreous. Head and thorax cinereous, with a brownish grey gloss. Forewings rather shining, pale cinereous, shaded with dark brown at the base, which is diffused outwards along the dorsum and shortly along the costa, also lightly sprinkled across the apical portion of the wing; there is a faint indication of three spots, one about the middle of the disc, one at the end of the cell, and one on the fold nearer to the former than to the latter; cilia pale cinereous. Exp. al. 22 mm. Hindwings pale brownish cinereous, the cilia slightly paler. Abdomen pale cinereous, transversely banded above at the joints with dark brown. Legs pale fawn-ochreous.

Type ♂ (27522) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Unique.

**12.** PSYCHRA, gen. nov.

(ψυχρά=unedifying).

Type *Psychra phycidiformis* Wlsm.

Antennae ( $\frac{2}{3}$ ), serrate toward the apex, biciliate ( $\frac{2}{3}$ ) throughout. Maxillary Palpi short, convergent. Labial Palpi projecting scarcely more than the length of the head beyond it, median joint long, slightly thickened, terminal joint very short ( $\frac{1}{3}$ ), slender, acute. Haustellum scaled. Head and Thorax smooth. Forewings with the costa slightly arched, apex depressed pointed, termen oblique: neuration 12 veins; 7 and 8

stalked, 7 to costa. Hindwings broader than the forewings, termen scarcely sinuate, apex obtuse; ♂ with a costal fold containing an expansible hair-pencil: neuration 8 veins; 3 and 4 stalked (probably variable); 5 nearly parallel to 3+4; 6 and 7 connate or stalked. Abdomen not flattened. Legs, hind tibiae somewhat roughly clothed.

Closely allied to *Thyrocopa* Meyr., and *Catamemphis* Wlsm., from both of which it differs in the much shorter terminal joint of the palpi and in the structure of the antennae.

**26.** (1) *Psychra phycidiformis*, sp. nov. (Pl. XIV. fig. 4).

Antennae greyish fuscous, whitish at the base. Palpi whitish, shaded with fuscous externally. Head and Thorax whitish, much shaded above with fuscous (in some specimens almost entirely fuscous). Forewings greyish white, more or less suffused and sprinkled with fuscous throughout; the dark scales aggregated in a spot at the middle of the base, which is diffused downward along the dorsum into a more or less extended dorsal shade; in a large spot on the middle of the fold, almost confluent with a smaller reduplicated spot on the cell above its inner extremity; this is followed by a brownish ochreous shade along the cell, terminating in a transverse fuscous spot on its outer extremity; a series of about six dark costal spots extends from the middle to the apex, a similar series of six lying around the termen at the base of the greyish cinereous cilia; a pale angular band is left, by interruption of the dark shading, commencing between the first two costal spots and running outward half-way between the cell and the apex, thence deflected backward parallel with the termen to the dorsum before the tornus. Exp. al. ♂ 24—26; ♀ 28—30 mm. Hindwings: ♂, rather dark brown; cilia brownish grey: ♀, pale brownish; cilia whitish, slightly speckled. Abdomen: ♂ brown; ♀ whitish; the ovipositor strongly extruded. Legs whitish in both ♂ and ♀.

Type ♂ (27176); ♀ (26719) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894, (10) vi. 1894. Eleven specimens.

The ♂ is a good deal darker than the ♀, by the greater suffusion of the pale ground-colour, and the body and hindwings are considerably darker, the antennae are also somewhat stouter.

**27.** (2) *Psychra brevipalpis*, sp. nov. (Pl. XIV. fig. 5).

Antennae brownish fuscous, with indistinct pale annulations above. Palpi brownish fuscous, pale cinereous at the end of the median joint. Head pale brownish cinereous. Thorax brownish fuscous, sprinkled with pale cinereous. Forewings dark brownish cinereous, powdered with hoary whitish, more noticeably before the middle of the cell and in an oblique transverse band beyond the cell parallel with the termen; a pair of fuscous spots, scarcely beyond the middle of the cell, are followed by another pair at



the end of the cell, these are obliquely placed, the lower one of the first pair nearer to the base than the upper, the upper one of the second pair nearer than the lower; beyond the middle are five fuscous costal spots, one at the apex, and an indistinct series of about six along the termen at the base of the brownish cinereous cilia. Exp. al. 26 mm. Hindwings dark brownish fuscous; cilia brownish fuscous with a dark line running through them near their base. Abdomen dark fuscous banded with dark brownish ochreous. Legs brownish cinereous.

Type ♂ (27853) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Unique.

The hindwings are much darker in this species than in *phycidiformis*, Wlsm.

### 13. CATAMEMPISIS, gen. nov.

(κατάμεμψις = discontent).

Type *Catamempsis decipiens* Wlsm.

Antennae strongly serrate anteriorly, with some appearance of biserration towards the apex; biciliate throughout. Maxillary Palpi short, convergent. Labial Palpi recurved, reaching high above the vertex; median joint densely clothed with appressed scales; terminal joint less than half the length of the median (but possibly variable). Haustellum scaled. Head and Thorax smooth. Forewings broad, widening outward, costa arched, termen oblique, not sinuate: neuration 12 veins; 7 and 8 stalked, 7 to apex. Hindwings broader than the forewings, termen very obliquely rounded; ♂ with costal fold containing an expansible hair-pencil: neuration 8 veins; 3 and 4 connate, 6 and 7 stalked (these veins will probably be found variable). Abdomen not flattened. Legs, hind tibiae with appressed scales, flattened.

Closely allied to *Thyrocopa* Meyr., from which it differs in the structure of the antennae of the ♂, thus approaching *Ptychothrix* Wlsm., which however has strongly bipectinate antennae.

### 28. (1) *Catamempsis decipiens*, sp. nov. (Pl. XIV. fig. 6).

Antennae pale fawn-ochreous, basal joint black. Palpi blackish, sprinkled with white scales externally, and more thickly on their inner sides. Head fawn-brown, mixed with blackish. Thorax dark purplish black. Forewings dull fawn-ochreous, with a purplish black cloud extending from the base along the upper edge of the cell and slightly diffused downward around its outer end where a reduplicate purplish black spot rests on the cross-vein; this is preceded by a single spot of the same colour about the middle of the cell; the termen is very faintly clouded with scattered fuscous scales, on which two or three spots are visible at the base of the pale fawn-ochreous cilia. Exp. al. ♂ 40; ♀ 50 mm. Hindwings brownish grey; cilia pale brownish ochreous. Abdomen brownish grey. Legs whitish ochreous.

Type ♂ (28649); ♀ (28045) Mus. Wlsm.

HAB. OAHU: Near head of Kawaihoa Gulch, (1) IV. 1893.—HAWAII: Oloa, (1) IX. 1896 (Type ♀); Oloa, 2000 ft., (1) XI. 1896 (Type ♂). Three specimens (that from Oahu, broken and in very poor condition).

The ♀ has the palpi distinctly paler, being whitish ochreous sprinkled with darker scales, the terminal joint is slightly longer than in the ♂. In the forewings there is less cloudy suffusion, the ground-colour being chalky whitish ochreous. The hindwings also are much paler than in the ♂ and may be described as sericeous whitish. The abdomen is whitish with transverse bands of tawny reddish brown across the segments, the ovipositor is strongly extruded.

This species so greatly resembles *Thyrocopa gigas* Btl., that great care must be taken in separating them. In the case of the ♂ no real difficulty arises owing to the structure of the antennae, but in the ♀ it will be found better to rely upon the comparative length of the terminal and median joints of the palpi; the terminal being much shorter in proportion to the median than in *Thyrocopa gigas*, although there is much variation in their relative lengths in this species.

#### 14. THYROCOPA Meyr.

n. syn. = *SYNOMOTIS* Meyr.

Type (1) *Thyrocopa abusa* Wlsm. (Meyr. 1883).

THYROCOPA Meyr., Ent. Mo. Mag. xx. 32—3 (1883)<sup>1</sup>.

1 (Type) *abusa* Wlsm (= *\*usitata* Meyr.—*nec* Btl.).

Type (2) *Synomotis epicapna* Meyr. (Meyr. 1883)

= *SYNOMOTIS* Meyr., Ent. Mo. Mag. xx. 33 (1883).

1 (Type) *epicapna* Meyr.

Antennae moderate, filiform pubescent; basal joint moderate, simple. Maxillary Palpi short, drooping. Labial Palpi long, recurved; second joint thickened with appressed scales, somewhat rough beneath; terminal joint as long as second, moderate, acute. Tongue moderate. Head smooth, side-tufts short, erect. Thorax smooth. Forewings elongate oblong; with 12 veins. 2 from considerably before angle of cell, 3 from angle, 7 and 8 stalked, 7 to costa. Hindwings trapezoidal, somewhat broader than forewings, hind margin very slightly rounded, cilia short ( $\frac{1}{5}$ ); costal edge folded and bent back above, forming a deep furrow on upper surface, in which lies a very long pencil of hairs (in ♂ only?); with 8 veins, 3 and 4 from a point at angle of cell, 5 parallel to 4, 6 and 7 stalked. Abdomen stout, somewhat depressed, distinctly margined. Legs; posterior tibiae with short, dense, appressed hairs.

This does not nearly approach any described genus, but is allied to the two following genera," [*Synomotis* Meyr., and *Autosticha* Meyr. (= § *Automola* Meyr.)] "which together belong to a peculiar group of the *Gelechiadae*, apparently forming a considerable proportion of the Hawaiian fauna." Meyrick<sup>1</sup>.

29. (1) *Thyrocopa gigas* Btl. (Pl. XIV. fig. 7).

*Depressaria gigas* Btl., Ann. & Mag. NH. (5. s.) VII. 397, No. 33 (1881)<sup>1</sup>. (*Genus?*) *gigas* Meyr., Ent. Mo. Mag. xx. 32 (1883)<sup>2</sup>.

Antennae brownish grey, the basal joint brownish fuscous. Palpi with the terminal joint somewhat shorter than the median; median joint ochreous, densely speckled, especially on their outer sides, except at the extreme apex, with black; terminal joint blackish. Head and Thorax dark brown. Forewings varying from dark to paler brown, irrorated with blackish scales; with a reduplicated blackish spot at the end of the cell, and a single spot preceding these on the disc, about half-way to the base; a third spot, on the fold a little beyond the discal spot, is sometimes only faintly indicated; the blackish irroration is especially noticeable in a curved line a little beyond the end of the cell and in the terminal area, these two shades being separated by a paler outwardly bowed fascia scarcely reaching the margins; on the outer half of the costa and along the termen is a series of about twelve blackish marginal spots preceding the cilia which are brownish cinereous, with darker shades running through them. Exp. al. 40—48 mm. Hindwings brownish ochreous, more or less deeply shaded with brownish fuscous, a small blackish spot on the costa immediately before the apex, and a series of less distinct spots around the termen in the base of the cilia which are slightly paler than the wing, but clouded with fuscous on their outer half; underside with a somewhat lunate shade-spot at the end of the cell. Abdomen brownish ochraceous, much clouded transversely with brownish fuscous; the paler bands which mark the segments sometimes accompanied by chestnut-brown scaling; a double series of blackish lateral spots runs along the underside which is pale ochraceous. Legs ochraceous, speckled with blackish.

Type ♂ (119 : 81. 7) *Maui*, Mus. Br. [Caenotype ♂ (27350) Mus. Wlsm.].

HAB. KAUAI: Kaholuamano, 4000 ft., (17) IV. 1895; 3000—4000 ft., (4) VI. 1894 (Perkins).—OAHU: Waianae Mts., 2500—3000 ft., (2) 1892 (Perkins).—MOLOKAI: nearly 5000 ft., (1) 22. IX. 1893 (Perkins).—MAUI: Haleakala, 4000 ft. (Blackburn)<sup>1</sup>; 5000 ft., (3) V. 1896 (Perkins). Twenty-seven specimens.

There is considerable variation in the intensity of colouring in this species; the ♀ appears to be scarce, only two specimens being taken.

**30. (2) *Thyrocopa* (?) *viduella*, sp. nov. (Pl. XIV. fig. 8).**

Antennae greyish fuscous, the basal joint partly whitish. Palpi with the median joint dark greyish fuscous, slightly speckled; the terminal joint shorter than the median, whitish, speckled with greyish fuscous. Head and Thorax white, the latter sprinkled with greyish fuscous. Forewings greyish fuscous, sprinkled with whitish scales; with an irregular white blotch occupying the outer half of the cell and diffused downward across the fold, containing near its basal extremity a dark fuscous transverse shade and near its outer extremity a dark fuscous curved, or reniform, transverse spot, the space between the two being partly occupied by mixed brownish ferruginous and greyish fuscous scaling; beyond the end of the cell, somewhat abruptly angulated at its outer extremity, is a narrow white transverse fascia commencing on the costa at three-fifths from the base whence it tends obliquely outward, descending from its angle direct to the dorsum before the tornus, on it is a slight suffusion of rusty brownish scales; beyond the fascia are four whitish costal spots before the apex, and the series is continued along the termen, but does not break a dark line running along the middle of the cilia which are greyish fuscous, somewhat paler towards the apex; at the extreme base of the dorsum there is a small whitish spot, and the dark scales near the base of the fold give a chestnut reflection in a strong light. Exp. al. 40 mm. Hindwings shining, bone-white, with a narrow band along their margin shaded with greyish fuscous; cilia shining, bone-white, with some greyish fuscous intermixed towards the apex. Abdomen bone-white, sprinkled and narrowly banded with greyish fuscous. Legs bone-white, the tarsi banded with greyish fuscous.

Type ♀ (27149) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

A very distinct species, the ♂ is at present unknown.

**31. (3) *Thyrocopa* (?) *cinerella*, sp. nov. (Pl. XIV. fig. 9).**

Antennae pale cinereous, dusted with fawn-brown. Palpi, Head and Thorax pale cinereous, sprinkled with fawn-brown scales. Forewings three times as long as wide, somewhat expanding outward, costa moderately straight, apex depressed, obtuse, termen oblique, not sinuate; whitish cinereous, profusely dusted with fawn-brown scales which are concentrated in a discal patch a little before the middle, in a plical patch scarcely beyond it, and in a large reniform spot at the end of the cell; an indistinct, outwardly bowed, pale band crosses the wing before the profusely shaded terminal and apical area; cilia whitish cinereous. Exp. al. 43—45 mm. Hindwings broader than the forewings; brown-grey; cilia whitish cinereous. Abdomen brown-grey. Legs whitish cinereous, with some brownish sprinkling.

Type ♀ (26986) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., vi. 1894. Two specimens.

The ♂ is at present unknown, but there can be little doubt that this species is congeneric with *Thyrocopa gigas* Btl.

**32.** (4) *Thyrocopa megas*, sp. nov. (Pl. XIV. fig. 10).

Antennae white, shaded with ochreous outwardly. Palpi white, the median joint sprinkled externally with brownish grey; the terminal joint much shorter than the median, shaded with brownish grey beneath. Head white. Thorax white, sprinkled with brownish grey. Forewings three times as long as broad; white, sprinkled with elongate brownish grey scales which are assembled in a reduplicated patch on the middle of the cell, in another on the fold scarcely beyond it, and in a third at the outer end of the cell from which to the tornus there is a slight suffusion of the same colour; cilia white, sprinkled along their base with brownish grey. Exp. al. ♂ 38—42; ♀ 42 mm. Hindwings broader than the forewings, ♀ shining, silky white, cilia the same, a tuft of long yellowish white hairs from the base of vein 1; ♂ with the ground-colour slightly yellower than in the ♀. Abdomen whitish, with narrow transverse ferruginous bands above. Legs white.

Type ♀ (28215); ♂ (28214) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Three specimens.

The terminal joint of the palpi is shorter in this species than in *cinerella* Wlsm.

**33.** (5) *Thyrocopa albonubila*, sp. nov. (Pl. XIV. fig. 11).

Antennae brownish grey, the basal and adjacent joints sprinkled with white. Palpi white, the median joint shaded externally on its basal half with brownish fuscous, sprinkled beyond; terminal joint ( $\frac{2}{3}$ ), sprinkled with brownish fuscous. Head and Thorax white, with brownish grey sprinkling. Forewings white, profusely sprinkled with greyish brown scales, leaving a sinuate, ill-defined white subterminal band half-way between the cell and the termen, parallel with the margin but not reaching the costa; in addition to the profuse sprinkling there are some darker brownish fuscous spots, one at the extreme base of the costa, slightly produced and dilated at the base of the cell, one on the middle of the fold with two others on the cell above it, the first of which is anterior to it and less further removed than the second which is straight above it; a large curved spot lies at the end of the cell with a costal spot above and a little before it; a series of brownish spots is faintly indicated at the base of the white terminal and costal cilia. Exp. al. ♂ 24—30; ♀ 28—30 mm. Hindwings greyish brown, with a whitish crescent-shaped spot at the end of the cell; cilia glossy white. Abdomen, ♂ greyish brown; ♀ white. Legs white.

Type ♀ (26721); ♂ (27094) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894, (5) vi. 1894. Six specimens.

In some specimens the forewings are more profusely sprinkled and the dark spots less clearly defined. Closely allied to *argentea* Btl., but the markings are arranged somewhat differently. In *albonubila* the three spots along the upper edge of the cell are almost in a line, and the anterior is more widely removed from the median than in *argentea*. In *argentea* the anterior spot is closely approximated to the median and distinctly below it. In both species there is a conspicuous dark spot on the costa before one-third, in *argentea* this spot more distinctly precedes that at the end of the fold than in *albonubila*.

**34.** (6) *Thyrocopa argentea* Btl.

*Depressaria argentea* Btl., Ann. & Mag. NH. (5. s.) vii. 399, No. 36 (1881)<sup>1</sup>.

Antennae brownish cinereous, whitish towards the base. Palpi whitish, speckled with brownish grey. Head dirty whitish. Thorax brownish grey. Forewings white, profusely speckled and smeared with pale brownish grey, leaving the ground-colour more conspicuous along the cell and in an ill-defined curved band beyond it; there are three pairs of brownish fuscous spots, the first two pairs obliquely parallel, one on the disc the other resting on the fold, the third pair straight at the outer end of the cell; there are also about four diffused costal shade-spots beyond the middle; cilia whitish, reticulated with pale brownish grey. Exp. al. ♂ 20—24; ♀ 24—27 mm. Hindwings pale brownish grey; cilia whitish. Abdomen pale whitish ochreous. Legs white.

Type ♂ (100:81.7) Mus. Br. [Caenotype ♂ (27447); ♀ (27448) Mus. Wlsm.].

HAB. OAHU: Mts., near Honolulu (Blackburn)<sup>1</sup>; near head of Kawaiolo Gulch (1) iv. 1893 (Perkins).—HAWAII: Oloo, (10) vii. 1895, (3) ix. 1896 (Perkins). Fourteen specimens.

The ♀ is as a rule slightly paler and with the markings more distinct than in the ♂. Closely allied to *albonubila* Wlsm., under which species the most noticeable differences are noted.

**35.** (7) *Thyrocopa* (?) *minor*, sp. nov. (Pl. XIV. fig. 13).

Antennae dusty brownish. Palpi whitish cinereous, dusted with brownish fuscous; the terminal joint slender, nearly as long as the median. Head and Thorax whitish cinereous, the latter speckled with brownish fuscous. Forewings whitish cinereous, dusted with brownish fuscous and suffused along the dorsum with pale greyish brown; a dark brownish fuscous spot lies at the base of the costa, touching the upper edge of the cell; a little before the middle is a group of large dark brownish fuscous spots, more or less confluent, the lower one in the middle of the fold, the upper one at the upper edge of the cell straight above it; of the two intermediate ones the anterior is the larger, these are followed beyond the middle by two smaller spots at the outer end of the

cell; a series of marginal spots of the same colour around the costa and termen, the five costal, commencing at the middle, being larger than the seven terminal commencing at the apex; a pale band between the cell and the termen is somewhat indistinct; cilia brownish grey, mixed with whitish cinereous; the marginal spots are very noticeable on the underside, running through the cilia and reproduced in the cilia of the hindwings. Exp. al. 19 mm. Hindwings brown; cilia brownish grey, with a brownish line running through them near their base. Abdomen brownish; anal tuft whitish cinereous, ovipositor extruded. Legs whitish, banded with greyish brown.

Type ♀ (26080) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 5. VI. 1893. Unique.

The ♂ is at present unknown, but there can be little doubt that the species belongs to the genus *Thyrocopa*.

**36. (8) *Thyrocopa indecora* Btl. (Pl. XIV. fig. 14).**

*indecora* Btl. ♂, = *lactea* Btl. ♀<sup>3</sup>.

*Depressaria indecora* Btl., Ann. & Mag. NH. (5. s.) VII. 397—8. No. 34 (1881)<sup>1</sup>.

*Depressaria lactea* Btl., Ann. & Mag. NH. (5. s.) VII. 398—9, No. 35 (1881)<sup>2</sup>. Genus? *indecora* Meyr., Ent. Mo. Mag. xx. 32 (1883)<sup>3</sup>.

Antennae brownish cinereous, faintly dotted above with fuscous. Palpi with the median joint whitish cinereous, thickly sprinkled with fuscous and pale rust-brown; terminal joint shorter than the median, fuscous, with some pale sprinkling. Head and Thorax brownish ochreous, sprinkled with fuscous. Forewings pale brownish ochreous, sprinkled with pale rust-brown and more profusely with brownish fuscous scales; the latter conspicuous in a small patch at the base of the costa, a large discal patch before the middle extending a little over the fold, a smaller curved patch at the end of the cell, two diffused waved shades between the cell and the termen, a series of five costal spots from middle to apex, and about seven indistinct spots in the basal half of the tawny greyish terminal cilia. Exp. al. ♂ 28—30; ♀ 35 mm. Hindwings pale brownish cinereous, profusely dusted with greyish brown scales; cilia brownish cinereous, with a shade-line running through them near their base. Abdomen tawny fuscous, with pale transverse bands. Legs pale rust-brownish, with whitish tarsal annulations.

Type ♂ (*indecora* Btl., 128:81. 7); ♀ (*lactea* Btl., 129:81. 7) Mus. Br. [Caenotype ♂ (28220); ♀ (28217) Mus. Wlsm.].

HAB. MAUI: Haleakala, 4000 ft., larva in rotten wood (Blackburn)<sup>1-2</sup>; Olinda (Haleakala), 4000 ft., (1) IV. 1894 (Perkins); Haleakala, 5000 ft., (6) V. 1896 (Perkins). Seven specimens.

The ♀ (described by Butler under the name *lactea*) has the ground-colour of the forewings whitish, irrorated with cinereous and pale fuscous; the hindwings are paler, more cinereous, than in the ♂, and whitish on the underside.

**37.** (9) *Thyrocopa tessellatella*, sp. nov. (Pl. XIV. fig. 16).

Antennae greyish fuscous; basal joint fawn-grey. Palpi fawn-grey, sprinkled with fuscous. Head and Thorax fawn-grey, the latter sprinkled with fawn-brown and fuscous. Forewings fawn-brown, with pale cinereous and fuscous sprinkling and several blackish spots; after some black scaling along the base of the fold is a conspicuous irregular black spot in the middle of the fold with four others above it on the cell, two before the middle of the wing and two at the end of the cell; the first pair obliquely placed, the upper spot further removed from the base than the lower, the second pair one above the other; along the costa are five blackish spots, one about the middle, the others at regular intervals, diminishing in size to the apex, the series being continued around the apex and termen at the base of the fawn-grey cilia; parallel with the termen a line of pale cinereous scaling curving outward towards the apex reaches the second of the costal spots and nearly extends to the tornus, other scales of the same colour being distributed around the plical and discal spots. Exp. al. 20—22 mm. Hindwings brownish grey; cilia pale cinereous, with a broken brownish grey line running through them near their base. Abdomen brownish grey. Legs cinereous, the hind tarsi somewhat clouded with brownish grey.

Type ♂ (25354) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (1) VII. 1892, (1) 13. VIII. 1892, (1) 17. VIII. 1892, (1) IX. 1892 (Perkins); [(1) without locality (Blackburn, 188) Mus. Meyr.]. Five specimens all ♂♂.

**38.** (10) *Thyrocopa depressariella*, sp. nov. (Pl. XIV. fig. 17).

Antennae umber-brown, with faint paler annulations towards the base. Palpi umber-brown; terminal joint as long as the median, much speckled with pale cinereous. Head and Thorax dark umber-brown, speckled with whitish cinereous above and on the tegulae. Forewings dark umber-brown, with tawny fuscous reflection, profusely speckled with pale cinereous inclining to ochreous (which in the ♀ predominates over the darker suffusion); in the ♀ a very dark umber-brown streak commences at the base of the fold, obscuring the middle of the cell and following its upper margin beyond the middle, reverting along its outer extremity to the lower angle (this in the ♂ is scarcely distinguished from the general dark suffusion of the wing, but a line of pale scaling separates its position from the darkened costa above it); a narrow dark line, sometimes broken into spots, runs along the termen at the base of the brownish cinereous cilia, and a series of five costal spots from above the outer extremity of the cell extends to the apex; a pale, angulated band beyond the end of the cell is more noticeable in the ♀ than in the ♂; underside whitish, with a series of brownish fuscous spots at the base of the cilia. Exp. al. ♂ 24—26; ♀ 26—32 mm. Hindwings whitish, very faintly shaded with pale brownish; cilia whitish, in the ♀ a brown line runs along their base around



the apex reaching to vein 1<sup>c</sup>; this is sometimes broken into spots, but is absent in the ♂ except at the extreme apex; underside whitish, with some brownish fuscous spots round the apex, these are less distinct in the ♂. Abdomen whitish, with a slight brownish tinge, the margins of the segments marked by pale brownish ochreous bands; ♀ with the ovipositor strongly extruded. Legs whitish ochreous, mottled with brown externally; hind tarsal joints sometimes much clouded with brownish fuscous.

Type ♀ (26856); ♂ (27195) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894, (10) vi. 1894. Eleven specimens.

*Thyrocopa* ? sp.

*Depressaria* sp. Btl., Ent. Mo. Mag. xix. 180, No. 7 (1883)<sup>1</sup>.

HAB. MAUI<sup>1</sup>: ix.<sup>1</sup>

Type. Mus. Br.

**39.** (11) *Thyrocopa nubifer*, sp. nov. (Pl. XIV. fig. 18).

Antennae very pale ochreous, dotted about with fuscous, the basal joint fuscous above. Palpi pale cinereous, the median joint dusted, the terminal joint suffused with fuscous. Head and Thorax pale cinereous speckled with fuscous. Forewings pale cinereous, profusely dusted with fuscous, which forms a cloud at the base of the costa, a diffused outwardly convex cloud beyond the end of the cell extending to the dorsum, a spot at the middle of the base, a curved spot at the end of the cell preceded by a smaller one before the middle of the wing, with some indication of a plical spot beneath it, and a series of five costal, one apical, and six terminal spots in the base of the pale greyish cinereous cilia. Exp. al. 30—32 mm. Hindwings shining, pale brownish cinereous; cilia whitish cinereous, with some fuscous spots in their base about the apex. Abdomen and legs whitish ochreous; the tarsi slightly clouded with fuscous.

Type ♂ (25174); ♀ (25175) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (1) 29. vi. 1892, (1) 28. vii. 1892, (1) ix. 1892, (1) 1893. Four specimens.

**40.** (12) *Thyrocopa seminatella*, sp. nov. (Pl. XIV. fig. 19).

Antennae pale fawn, minutely banded with fuscous above. Palpi pale fawn, shaded externally with fuscous nearly to the apex of the median joint, and at each extremity of the terminal joint. Head and Thorax pale fawn, the latter slightly shaded with brown. Forewings pale fawn, shaded with brown beyond the base, especially across the middle, along the dorsum, and along the lines of the nervures; profusely sprinkled with square black scale-points, except at the base and in a pale space immediately beyond the cell, these are concentrated in a spot on the middle of the disc, and in a reduplicated transverse

spot at its outer extremity; along the costa and termen, commencing beyond the middle, is a series of twelve blackish spots—five costal, one apical, five terminal and one tornal; cilia pale fawn, with a broken fuscous shade-line running through their middle. Exp. al. ♂ 26; ♀ 31 mm. Hindwings and cilia shining fawn-whitish, with one apical and four indistinct terminal brownish spots along their base. Abdomen whitish fawn, with narrow brownish bands across the somites. Legs whitish fawn, the tarsi speckled with brown.

Type ♀ (27521); ♂ (27523) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Two specimens.

**41.** (13) *Thyrocopa pulverulenta*, sp. nov. (Pl. XIV. fig. 20).

Antennae cinereous, faintly banded with fuscous above. Palpi fawn-brown, speckled with white scales, a whitish spot at the apex of the median joint, the terminal joint inclining to fuscous, but also speckled with white. Head and Thorax fawn-brown. Forewings fawn-brown, with dark brown spots and dusting; from the base is a broad costal streak extending to about one-third, profusely speckled with white and dark brown, and beyond the middle are five dark brown costal spots; along the fold, commencing at the base, runs a broken streak of dark brownish fuscous nearly to half the wing-length; above it is a dark fuscous spot on the middle of the cell, and another transverse spot at its outer extremity, accompanied before and behind by scattered dark scales; a broad dark brown shade occupies the terminal portion of the wing, somewhat broken by paler intervals between the veins; cilia very pale fawn. Exp. al. 23—26 mm. Hindwings rather shining, pale brownish cinereous, with a slightly darker brownish shade following the margin throughout and forming a line in the base of the whitish cinereous cilia. Abdomen very pale fawn-brownish. Legs whitish cinereous, the hind tarsal joints faintly shaded with fawn-brownish.

Type ♂ (25255) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (1) 29. VI., (1) 1. VII., (2) VII., (1) 13. VIII., (1) 17. VIII., (2) VIII., (2) 9. IX., (1) IX. (Perkins 1892).

In some varieties the prevailing colour is whitish cinereous, thickly bestrewn with brownish and greyish fuscous scales, except on an indistinct, outwardly curved, narrow transverse band at three-fourths from the base, with a faint indication of costal spots between this and the apex (25233).

**42.** (14) *Thyrocopa epicapna* Meyr. (Pl. XIV. fig. 21).

*Synomotis epicapna* Meyr., Ent. Mo. Mag. xx. 33—4 (1883)<sup>1</sup>.

“Antennae, Palpi, Head and Thorax pale fuscous, mixed with dark fuscous and ochreous-whitish. Forewings moderate, oblong, costa gently arched, apex almost acute, hind margin [=termen] slightly sinuate, moderately oblique; pale fuscous, densely

irrorated with darker fuscous; an indistinct, short, linear, dark fuscous mark in middle of disc; the three discal dots hardly indicated; faint traces of a paler angulated posterior transverse line: cilia pale fuscous, irrorated with darker fuscous. Exp. al. 16—17 mm. Hindwings whitish-grey, more whitish towards base; cilia whitish, with two grey lines. Abdomen ochreous-whitish. [Legs]: anterior and middle legs fuscous, with ochreous-whitish rings at apex of joints; posterior legs ochreous-whitish, sprinkled with fuscous." (Meyr.<sup>1</sup>).

Type ♂ (3568 Wlsm.) Mus. Meyr.

HAB. HAWAII<sup>1</sup>. (Blackburn—four specimens in poor condition. Mus. Meyr.).—KAUAI: Makaweli, sea-level, (2) IV. 1895 (Perkins).—HAWAII: Kona, 4000 ft., (2) 13. VIII. 1892 (Perkins).

Perhaps a small form of *pulverulenta* Wlsm., but the original specimens are not in sufficiently good condition for critical comparison. The Kauai and Hawaii specimens vary but appear to be *epicapna* Meyr.; more material is however required to decide this with certainty.

**43.** (15) *Thyrocopa alterna*, sp. nov. (Pl. XIV. fig. 22).

Antennae pale ochreous, spotted above with fuscous, basal joint fuscous above. Palpi pale brownish ochreous, thickly smeared with fuscous on the median joint externally, terminal joint fuscous. Head dark brownish ochreous. Thorax fuscous in front, pale brownish ochreous behind. Forewings pale brownish ochreous, with a broad dark fuscous band along the costa from base to two-thirds, where it is depressed and diffused outward, angulated beyond the end of the cell and reverting by the lower angle of the cell to the fold, becoming more diffused in its descent; a little beyond the middle of the cell, but before the wing-middle, is a conspicuous dark fuscous spot followed by a transverse spot at the end of the cell; a slight shade of diffused fuscous scales on the fold below the first spot, and along the dorsum except at the base; a series of obscure fuscous marginal spots around the apex and termen, connected by a fuscous line at the base of the pale brownish ochreous terminal cilia. Exp. al. 25 mm. Hindwings pale cinereous, profusely sprinkled with brownish grey scales; a brownish grey dividing line near the base of the whitish cinereous cilia. Abdomen brownish grey, with narrow transverse bands of rust-brown scales above. Hind legs whitish ochreous; the hind tarsi banded with fuscous.

Type ♂ (28225) *Maui*, Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., (1) v. 1896; Haleakala, 5000 ft., (2) v. 1896.—HAWAII: Hilo, 2000 ft., (1) I. 1896. Four specimens.

**44.** (16) *Thyrocopa immutata*, sp. nov. (Pl. XIV. fig. 23).

Antennae pale brown, with darker spots above at the base. Palpi pale brown, the terminal joint dark tawny brown. Head and Thorax brown, the latter with a tawny

suffusion. Forewings brown, with a tawny vinous suffusion, except on the outer fourth; a basal streak on the fold, a spot on the middle of the fold, a discal spot above and before it, and a reduplicated spot at the end of the cell, all tawny fuscous; cilia pale brownish. Exp. al. 26—28 mm. Hindwings and cilia pale yellowish brown. Abdomen and Legs pale brownish ochreous.

Type ♂ (27760) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Two specimens.

45. (17) *Thyrocopa fraudulentella*, sp. nov. (Pl. XIV. fig. 24).

Antennae brownish fuscous above, paler beneath, with faint paler annulations. Palpi brownish fuscous, median joint thickly speckled with pale cinereous. Head and Thorax brownish fuscous, with some cinereous sprinkling. Forewings cinereous, with a slight ochreous tinge; the pale ground-colour almost entirely suffused with dark brownish fuscous in which the usual discal and plical spots are plainly visible, the first discal being placed a little before the plical, those at the end of the cell being paired one above the other; the costa is spotted beyond the middle, the series being continued around the termen; the tendency to ochreous colouring is more visible between the costal spots than elsewhere, the pale ante-terminal shade is ill-defined and scarcely visible in some specimens; cilia slightly paler than the wings. Exp. al. 26—28 mm. Hindwings brownish grey, paler and more glossy towards the base; cilia shining pale cinereous. Abdomen corresponding to the colour of the hindwings. Legs pale cinereous; hind tarsi somewhat shaded in the ♀.

Type ♂ (28728); ♀ (28732) *Hawaii*, Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (1) v. 1896.—HAWAII: Mt. Kilauea, (5) VIII. 1896; Kona, 4000 ft., (1) 13. VIII. 1896; Olaa, (1) IX. 1896. Eight specimens.

46. (18) *Thyrocopa pallida*, sp. nov. (Pl. XIV. fig. 25).

Antennae sandy ochreous, shaded and somewhat annulate with brownish fuscous in the ♂ (sometimes unshaded in the ♀). Palpi whitish cinereous; terminal joint nearly as long as the median, umber-brown; median joint much speckled with umber-brown, especially in the ♂. Head and Thorax umber-brown in the ♂, much speckled with pale cinereous (sometimes varying to sandy ochraceous in the ♀). Forewings cinereous (varying to ochraceous in the ♀), much speckled and suffused with brownish fuscous in the ♂ (less so in the ♀); a plical spot, slightly preceded by a discal one above it, and a reduplicated spot at the end of the cell are dark fuscous (these are less apparent in the ♀, but exist in the same positions); the apex and termen are somewhat spotted with fuscous in both sexes, the cilia being slightly paler than the general wing-colour, but the tendency is for the ♂ to be much darker than the ♀ in all respects; in both sexes there is an outwardly angulated ill-defined pale wave-line beyond the end of the cell, running parallel to the termen and reverting inward toward the costa. Exp. al. 24—26 mm.

Hindwings, ♂ whitish, with a slight buff-brown gloss; ♀ straw-white, with some slight sprinkling of brownish fuscous scales towards the termen, a few brown spots at the base of the pale cilia being generally more noticeable in the ♀ than in the ♂. Abdomen corresponding in colour with the hind wings. Legs of the same colour, but in some of the darker specimens the hind tarsal joints are a good deal shaded with brownish fuscous.

Type ♂ (27645 *Kauai*); [♀ (26187 *Molokai*)] Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (4) iv. 1895; Mts., 3000—4000 ft., (4) vi. 1894.—MOLOKAI: about 4000 ft., (1) 22. v., (1) 9. vi., (1) vi., 1893; above 3000 ft., (1) 30. v., (1) 13. vi. 1893. Thirteen specimens.

There is only a single ♀ from Kauai (27647). This very possibly belongs to another closely allied species; it has the forewings somewhat narrower and straighter than the Molokai specimens (all ♀♀), which therefore agree much better with the ♂ from Kauai.

47. (19) *Thyrocopa adumbrata*, sp. nov. (Pl. XIV. fig. 26).

Antennae pale brownish cinereous, spotted above with fuscous. Palpi pale brownish cinereous, speckled externally with brownish fuscous. Head and Thorax pale brownish cinereous, the latter shaded with fuscous. Forewings pale brownish cinereous, a pale fuscous spot about the middle of the cell, with a few similar scales below it on the fold; another spot at the outer end of the cell and a slight shade of the same at the apex, attenuated along the termen to the middle of the dorsum; cilia whitish cinereous. Exp. al. 24 mm. Hindwings and cilia shining, silky whitish. Abdomen yellowish white, narrowly banded with pale ochreous mixed with fuscous scales. Legs very pale ochreous.

Type ♀ (25314) Mus. Wlsm.

HAB. HAWAII: Kona, 3000 ft., ix. 1892. Unique.

This single specimen is closely allied to *pallida* Wlsm., but appears to differ slightly in the form of the hindwings which are broader and shorter; the cilia are unspotted. In the forewings the marginal spots on the underside are less apparent, and on the upper side the spot at the end of the cell is not reduplicated—in other respects it would be exceedingly difficult to separate them.

48. (20) *Thyrocopa inermis*, sp. nov. (Pl. XIV. fig. 27).

Antennae pale brownish cinereous, dotted along the upper side with tawny brown. Palpi tawny brownish, sprinkled with pale cinereous. Head pale cinereous. Thorax tawny brownish. Forewings tawny brownish, with an indistinct darker spot at the middle of the base, another at the end of the cell, and a third half-way between them; cilia tawny brownish, tipped with pale cinereous. Exp. al. 26—32 mm. Hindwings and cilia whitish cinereous. Abdomen cinereous, inclining to ochreous at the sides and on the anal tuft. Legs whitish cinereous, the tarsi banded above with tawny brown.

Type ♂ (25320); ♀ (25751) Mus. Wlsm.

HAB. HAWAII: Kona, 3000 ft., (♂) IX. 1892; about 5000 ft. (♀) 4. VII. 1892. Two specimens.

49. (21) *Thyrocopa usitata*, Btl. (Pl. XIV. fig. 28).

*Depressaria usitata* Btl., Ann. & Mag. NH. (5. s.) VII. 396, No. 32 (1881)<sup>1</sup>.

Antennae fuscous. Palpi fuscous, sprinkled with pale cinereous, more profusely on the inner side of the median joint. Head brownish fuscous. Thorax tawny fuscous. Forewings tawny fuscous, irrorated with dull fawn-ochreous scales which form an indistinct fascia parallel with the termen; an indistinct dark fuscous spot, with another beyond and below it in the fold, precedes a similar spot at the end of the cell; cilia tawny fuscous, with a darker line near their base; underside shining fuscous, costa unspotted. Exp. al. 23—26 mm. Hindwings and cilia dark brownish cinereous, with a darker line running through the latter near their base. Abdomen brownish cinereous, with a greyish tinge above. Legs pale brownish cinereous, the tarsi broadly banded with tawny fuscous.

Type ♀ (No. 69 : 81. 7) Mus. Br. [Caenotype ♂ (27849); ♀ (27175) *Kauai*, Mus. Wlsm.].

HAB. KAUAI: Kaholuamano, 4000 ft., (6) IV. 1895; Mts., 3000—4000 ft., (2) V. 1894.—OAHU: probably from Honolulu<sup>1</sup>; near head of Kawailoa Gulch, (1) IV. 1893.—HAWAII: Mt. Kilauea, (3) VIII. 1896. Twelve specimens.

Close allied to *epicapna* Meyr., and *abusa* Wlsm., but differing from both in its larger size and darker hindwings, and its more leaden and shining appearance.

50. (22) *Thyrocopa abusa*, sp. nov. (Pl. XV. fig. 1).

n. syn. = \**usitata* Meyr. (nec Btl.).

*Thyrocopa* \**usitata* Meyr., Ent. Mo. Mag. xx. 33 (1883)<sup>1</sup>.

Antennae sordid fawn, faintly annulate. Palpi fawn, profusely dusted with dark fawn-grey, the terminal joint shaded throughout with the same. Head and Thorax fawn, with darker scales thickly intermixed. Forewings fawn-ochreous, profusely dusted with dark fawn-grey, especially towards the base and in a scarcely distinguishable shade-band around the outer end of the cell; a discal spot, at two-fifths from the base, scarcely precedes a plical spot beneath it, and is followed by a spot at the end of the cell (sometimes reduplicated) above which commences a series of five, rather oblique, costal spots of the same colour continuing to the apex, all these are fuscous; cilia of the same colour as the forewings, exhibiting traces of a darker shade-line along their base. Exp. al. 18—24 mm. Hindwings rather shining, whitish ochreous, with pale fawn suffusion, especially on the outer half, extending over the pale cilia. Abdomen whitish ochreous. Legs very pale fawn-ochreous.

Type ♂ (3572, Wlsm. Det.); ♀ (3556, Wlsm. Det.) Mus. Meyr.

HAB. HAWAIIA<sup>1</sup>. [? OAHU (3) Blackburn.]—OAHU: Waianae Mts., 2000—3000 ft., (2) iv. 1892 (Perkins); Honolulu, (1) 29. viii. 1883 (Meyrick). Six specimens.

On comparing Mr Meyrick's specimens, determined by him as *usitata* Btl., on which he founded the genus *Thyrocopa*, I am compelled to regard them as representing a species distinct from Dr. Butler's type. It is possible that the error originated through the Rev. T. Blackburn having retained in his own collection specimens erroneously regarded as representing his No. 69, which he sent to the British Museum. The chief points of difference appear to be that the true *usitata* Btl. has darker, less powdery, and more uniformly coloured forewings, and very distinctly darker hindwings, the whole insect being more shiny with a slight purplish gloss which is not apparent in Meyrick's specimens. The ♀ is larger than the ♂, but the average size of specimens is certainly smaller than that of the true *usitata* Btl.

The above description is taken from a ♂ in fair condition which was one of the original types of *\*usitata* Meyr. (nec Btl.) from which the genus *Thyrocopa* Meyr. was described.

51. (23) *Thyrocopa subahenea*, sp. nov. (Pl. XV. fig. 2).

Antennae pale brownish ochreous, faintly barred above with brown. Palpi and Head pale brassy brownish. Thorax dark tawny greyish. Forewings pale brassy brownish, with a tawny suffusion, with the usual two discal spots and one plical a little beyond the first discal; the tawny suffusion yields to an indistinct band of the brassy ground-colour curved outward beyond the end of the cell and diffused in faint radiating lines along the apical and terminal veins; cilia pale brassy brownish. Exp. al. 22—25 mm. Hindwings and cilia bronzy brownish grey. Abdomen greyish, with transverse chestnut-brown bands. Legs pale cinereous, shaded with bronzy brownish.

Type ♂ (26336); ♀ (26335) Mus. Wlsm.

HAB. MOLOKAI: 3000 ft., 6. ix. 1893. Two specimens.

52. (24) *Thyrocopa leonina*, sp. nov. (Pl. XV. fig. 3).

Antennae pale tawny. Palpi tawny; the terminal joint shorter than the median. Head tawny, face greyish. Thorax tawny, with a greyish suffusion. Forewings elongate, somewhat acute, the costa slightly arched, termen very oblique; tawny, with a single dark tawny fuscous spot at the upper angle of the cell (no other visible markings); cilia tawny grey. Exp. al. 22 mm. Hindwings and cilia shining, pale brownish cinereous. Abdomen and legs pale brownish cinereous.

Type ♂ (26434) Mus. Wlsm.

HAB. LANAI: 2000 ft., ii. 1894. Unique.

**53.** (25) *Thyrocopa* (?) *geminipuncta*, sp. nov. (Pl. XV. fig. 4).

Antennae very pale ochreous, the basal joint dusted with brown. Palpi very pale ochreous, dusted externally with fawn-brown; the terminal joint shorter and somewhat more slender than the median. Head and Thorax very pale ochreous. Forewings very pale ochreous, shaded on the apical third and along the outer half of the cell with fawn-brown; a single small dark brown spot on the middle of the cell is followed by two similar spots, one above the other, at the end of the cell; there is an indication of a minute dark brown dot in the fold below and beyond the first discal spot; cilia whitish ochreous, shaded with brownish grey. Exp. al. 21 mm. Hindwings pale, shining, whitish cinereous; cilia white. Abdomen whitish cinereous. Legs whitish ochreous.

Type ♀ (26318) Mus. Wlsm.

HAB. MOLOKAI: 4500 ft., 17. IX. 1893. Unique.

The ♂ is unknown, but the type agrees in structure with the ♀ of *Thyrocopa* to which genus it is doubtless rightly referred.

**54.** (26) *Thyrocopa* (?) *mediomaculata*, sp. nov. (Pl. XV. fig. 5).

Antennae blackish. Palpi blackish, sprinkled with greyish white; the terminal joint fully as long as the median. Head and Thorax blackish, sprinkled with greyish white. Forewings greyish white, very thickly sprinkled with fuscous, with some black scaling at the base; a large black rounded patch slightly before the middle of the wing and a smaller blackish spot at the end of the cell, a faint indication of three darkened costal patches before the apex and some blackish scaling along the base of the stone-grey terminal cilia. Exp. al. 28 mm. Hindwings pale cinereous, profusely sprinkled throughout with brownish grey scales; cilia pale cinereous, a shade-line running through them near their base. Abdomen greyish fuscous, sprinkled with whitish, with narrow chestnut-brown bands above. Legs greyish fuscous, much sprinkled with whitish, the tarsi with whitish annulations.

Type ♀ (28125) Mus. Wlsm.

HAB. MAUI: Haleakala, crater, x. 1896. Unique.—[? HAWAII: Kona, 4000 ft., (1) 4. VIII. 1892.]

It is probable that a new genus is indicated by this specimen, but in the absence of the ♂ this cannot be determined. The hindwings are narrower than in the typical forms of *Thyrocopa*, and in the forewings veins 7 and 8 are stalked for the greater part of their length. A ♀ from Kona (28685) without a head and in very poor condition probably belongs to this species.



## II. OECOPHORIDAE Meyr.

## 15. ETHMIA Hb.

Type *Tinea aurifluella* Hb. (= *\*pyrausta* Hb.).

ETHMIA Hb., Verz. bek. Schm. 163 (1822?).

= *PSECADIA* Hb. (1826); = *ANESYCHIA* Hb. (1826); = *DISTHYMNIA* Hb. (1826); = *ME-LANOLEUCA* Stph. (1829); = *AEDIA* Dp. (1836); = *CHALYBE* Dp. (1836).

55. (1) *Ethmia colonella*, sp. nov. (Pl. XV. fig. 6).

n. syn. = *\*hilarella*, Btl. (nec Wkr.).

= *Azinis \*hilarella* Btl., Ent. Mo. Mag. xix. 180 (1883)<sup>1</sup> [nec Wkr.].

Antennae pale slaty grey, the basal joint with a black spot at each extremity above. Palpi pale slate-grey, with a black spot near the base of the median joint externally, and two black rings around the short terminal joint. Head and face pale slaty grey, a black spot on the crown between head and thorax. Thorax slaty grey, with six black spots in two lines of three, the anterior pair situated on the tegulae. Forewings slaty grey, with several black spots (from fifteen to eighteen) situated as in other allied species; one at base of costa, two below costa, both on basal fourth, one at the middle of the base, one near it on the fold, another at one-fourth at lower edge of fold, one large, on disc above middle, another below and beyond it in the fold, two below the fold, and a group of seven or eight around the outer end of the cell extending towards the apex; besides these there are seven marginal spots along the termen; the spots are faintly outlined with a paler shade of slaty grey, especially the discal spot which is slightly elongate, its pale margin being diffused back and forward; cilia slaty grey on their basal half, slightly darker on their outer half. Exp. al. 21—26 mm. Hindwings yellow-ochreous, the apex fuscous, the fuscous shade diffused inwards at an angle, reaching to the end of the cell; apical cilia greyish fuscous, the remainder pale yellow-ochreous. Abdomen bright yellow-ochreous, with seven black spots above, and four or five on either side beneath. Legs ochreous, the tarsi broadly banded with black.

Type ♂ (28751); ♀ (28752) Mus. Wlsm.

HAB. HAWAIIA<sup>1</sup>. OAHU: Honolulu. Larva on . . . . ? . . . . (an introduced plant) excl. x.—xi. 1896. Nineteen specimens.

This species, which much resembles *bicolorella* Gn., and *oculigera* Mschl., differs from both in having six or seven black spots on the upper side of the abdomen. These are absent in *bicolorella* and in the species occurring in Formosa which Dr. Butler regarded as identical with the Hawaiian species and with *hilarella* Wkr. *E. oculigera* differs from *colonella* in having four thoracic spots, not six, and in having only two or three black spots on the upper side of the abdomen posteriorly.

*Azinis hilarella* Wkr. is the ♀ of *Theoxenia penicillata* Wlsm., the latter names must sink as synonyms. No confusion can arise between *Azinis hilarella* ♂ and any species of *Ethmia*, the large mat of scales on the underside of the hindwings, which are black above except in the flexal region, at once distinguish it. *Azinis hilarella* ♀, which is with difficulty distinguished from some of the species of *Ethmia*, by appearance only, may be at once recognised by the transverse vein connecting the discoidal vein to vein 8. The true genus *Azinis* Wkr. (= *Theoxenia* Wlsm.) has as yet only been recorded from Ceylon.

No other species belonging to the *Oecophoridae* occurring in Hawaiiia and *colonella* being confined to gardens in Honolulu, where it feeds on a cultivated plant, at present unrecorded, it is probable that the species has been introduced with the plant on which it feeds from one of the groups of islands. Mr Perkins noted it as "common at Honolulu—introduced."

### III. HYPONOMEUTIDAE.

= *ELACHISTIDAE* Meyr. + *PLUTELLIDAE* Meyr.

#### 16. BATRACHEDRA Stn.

Type (1) *Gracillaria praeangusta* Hw. (Stn. 1854).

*BATRACHEDRA* Stn., Ins. Br. Lp. Tin. 225, 230—1, No. 4, Pl. VII. 5<sup>a-c</sup> (1854); Meyr., HB. Br. Lp. 661, No. 4 (1895): Pr. Lin. Soc. NSW. XXII. 299, 300—1 (1897).

Type (2) *Batrachedra syrrophella* Wlsm.

Antennae  $\frac{3}{4}$ , stout, simple, without pecten or eye-cap. Labial Palpi slender recurved, divergent, smooth; terminal joint shorter than the median. Maxillary Palpi minute. Haustellum well-developed. Head and Thorax smooth; face rather retreating. Forewings elongate, lanceolate: neuration 10 veins (7+8 coincident, 4+5 coincident); 6 and (7+8) stalked, enclosing the apex. Hindwings narrow, lanceolate, acute, cilia 3—3 $\frac{1}{2}$ ; ♂ with strong expansible subcostal hair-pencil from near base on upper side: neuration 6 veins (2+3+4 coincident); 5 and 6 stalked, arising from media; media connected with radius by a short inwardly oblique vein; 2+3+4 coincident, forming continuation of cubitus; cell open between cubitus and media. Abdomen slender, smooth. Legs, hind tibiae with fugitive hairs.

The above description was written before it was recognised that *syrrophella* was not sufficiently distinct from the type of *Batrachedra* to be worthy of a geneonym, similar developments occurring within *Pyroderces* as defined by Meyrick, and *Hyposmocoma*. Sexual tufts in the *Hyponomeutidae* appear to be of only special value, and Meyrick's redescription of *Batrachedra* should be extended to include species with a subcostal hair-pencil on the hindwings in the ♂.

**56.** (1) *Batrachedra syrraphella*, sp. nov. (Pl. XV. fig. 7).

Antennae pale ochreous. Palpi whitish, with a narrow brownish transverse band on each joint externally. Head creamy whitish. Thorax very pale yellowish ochreous. Forewings very pale yellowish ochreous, with indistinct greyish brown spots and shading, the former distributed over the basal half of the wing above and below the fold, the latter confined to the outer half, where it assumes the form of three or four costal streaks merging obliquely outward in a central shade, becoming darker towards an apical point, beyond which a reduplicated dark brownish line curves around the apex in the basal half of the pale straw-grey cilia. Exp. al. 7—9 mm. Hindwings and cilia pale straw-grey; ♂ with ochreous subcostal hair-pencil. Abdomen very pale yellowish ochreous. Legs whitish, with seven or eight brownish cross-bands on the tibiae and tarsi externally.

Type ♂ (25862); ♀ (25864) *Oahu*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., about 2000 ft., (11) IV. 1892.—HAWAII: Mt. Kilauea, (1) VI. 1895, (1) VIII. 1896; Kona, 4000 ft., (4) 12. VIII.—8. IX. 1892; Kaawaloa (Kona) above 2000 ft., (1) IX. 1892. Eighteen specimens.

**57.** (2) *Batrachedra ephelus*, sp. nov. (Pl. XV. fig. 8).

Antennae pale straw-whitish. Palpi white, a broad brownish grey band on the median joint and two on the terminal joint externally. Head white, slightly shaded above with brownish grey. Thorax dirty whitish. Forewings shining, straw-white, faintly yellowish tinged, with several brownish grey spots and freckles, some near the base above and below the fold, three across the middle of the wing placed triangularly, several smaller beyond the cell and a slight shade along the costa; there are also three costal spots on the outer third, with three opposite dorsal spots and one at the apex, all rather darker, tending to brownish fuscous; cilia at the apex straw-whitish, on the dorsum lilac-grey. Exp. al. 10—11 mm. Hindwings tawny brownish grey; cilia lilac-grey, with greenish iridescence; ♂ with ochreous subcostal hair-pencil. Abdomen straw-whitish. Legs straw-white; tibiae and tarsi spotted on their outer side with brownish grey.

Type ♂ (26199); ♀ (26308) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 5. VI. 1893, 4500 ft., 7. IX. 1893.

**58.** (3) *Batrachedra bedelliella*, sp. nov. (Pl. XV. fig. 9).

Antennae brownish grey, with blackish bars above. Palpi whitish cinereous, tipped with brownish grey. Head and Thorax brownish grey; face white. Forewings brownish grey, showing confused pale cinereous mottling, very obscurely indicated, the whole wing, except under a strong lens, having a unicolorous dull brownish grey appearance; cilia brownish grey. Exp. al. 8—9 mm. Hindwings dark brownish grey; cilia brownish

grey; ♂ with dark grey expansible subcostal hair-pencil. Abdomen greyish fuscous, anal tuft inclining to ochreous. Legs brownish grey, tarsi slightly paler.

Type ♂ (26548) *Maui*, Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (4) III.—IV. 1894.—MOLOKAI: forest above Pelekunu, (1) VIII. 1893. Five specimens.

**59.** (4) *Batrachedra microstigma*, sp. nov. (Pl. XV. fig. 10).

Antennae pale fawn-ochreous. Palpi whitish, with three fuscous annulations, one near the end of the median joint and two on the terminal joint. Head and Thorax very pale fawn-ochreous. Forewings very pale fawn-ochreous (varying to whitish cinereous), slightly shaded with a sprinkling of brownish scales along the fold and around the apex; a small fuscous spot on the middle of the fold is succeeded by another above and beyond it on the cell, a third lying at the lower angle of the cell, the concentration of the dark scaling on the costa forms an indistinct spot above the latter; cilia pale fawn-ochreous. Exp. al. 8—10 mm. Hindwings very pale greyish ochreous; cilia pale fawn-ochreous; ♂ without subcostal hair pencil. Abdomen and Legs very pale fawn-ochreous; the tarsi slightly speckled with brownish fuscous.

Type ♂ (25141) *Oahu*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., 2000 ft., (2) IV. 1892.—HAWAII: Kona, above 2000 to 4000 ft., (5) 13. VIII.—8. IX. 1892; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892. Eight specimens.

**60.** (5) *Batrachedra supercincta*, sp. nov. (Pl. XV. fig. 11).

Antennae straw-whitish. Palpi whitish, slightly shaded before the end of the median joint. Head and Thorax whitish. Forewings shining, pearl-whitish, with a brownish grey shade along the costa from base to apex; this is dilated at the middle, forming a rather abrupt excrescence reaching to the fold; about the end of the cell is a dark brown spot, also connected at its upper edge with the costal shade; cilia tawny brownish grey. Exp. al. 8—9 mm. Hindwings pale grey; cilia tawny brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey (? *greasy*). Legs pearly whitish, with grey tarsal bands.

Type ♀ (26591); ♂ (26543) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III.—IV. 1894. Two specimens.

**61.** (6) *Batrachedra ruficiliata*, sp. nov. (Pl. XV. fig. 12).

Antennae shining, pale brownish cinereous. Palpi white, a brownish annulus near the base of the terminal joint, and a spot of the same colour on the median joint externally. Head and Thorax white; tegulae touched with brown. Forewings shining white, with a brownish fuscous streak running from the base along the costa to the middle, thence

slightly bent downward, dilated to the end of the cell, and attenuated beyond it to the apex, its outer half reaching the costa only in interspaces between four oblique white costal spots; a slight shade runs along the dorsum from the base, terminating in an elongate spot on the fold, a similar spot on the margin at the tornus; cilia at the apex whitish, with a brownish line at their base, and brown shading at their outer ends, tornal cilia tawny red. Exp. al. 9 mm. Hindwings grey, with tawny red cilia; ♂ without subcostal hair-pencil. Abdomen brownish. Legs shining white, with brownish fuscous tarsal spots.

Type ♂ (25579) Mus. Wlsm.

HAB. HAWAII: Kona, above 2000 ft., IX. 1892. Unique.

**62.** (7) *Batrachedra lomentella*, sp. nov. (Pl. XV. fig. 13).

Antennae pale fawn, faintly spotted above with brownish. Palpi white, with a fuscous spot externally on the median joint, before its apex, and two fuscous rings around the terminal joint. Head shining white. Thorax fawn-colour. Forewings fawn-brownish, becoming dark brown toward the costa; an elongate median white costal spot sends out a slender white line obliquely to the lower edge of the cell and is diffused to the dorsum before the tornal cilia; this is followed by three outwardly oblique, slender, short white costal streaks, set in dark brownish fuscous, which is continued around the apex in a slender line at the base of the cilia, reduplicated in a second line along their middle—a whitish streak lies along the termen within the first line; cilia brownish ochreous above the apex and between the two marginal lines, whitish at their outer extremities and about the tornus. Exp. al. 8—9 mm. Hindwings grey, with pale tawny grey cilia; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs white, tibiae with broad oblique greyish fuscous streaks on their outer sides posteriorly; a narrower streak and three fuscous spots on the tarsi; spurs white, the outer ones streaked with fuscous externally.

Type ♂ (26013); ♀ (26010) Mus. Wlsm.

HAB. OAHU: Waianae Mts., about 2000 ft., IV. 1892. Six specimens among dead fern leaves.

**63.** (8) *Batrachedra sophroniella*, sp. nov. (Pl. XV. fig. 14).

Antennae brownish fuscous above, whitish beneath. Palpi white, with two fuscous spots externally, one at the end of the median, the other at the base of the terminal joint which is also minutely tipped with fuscous. Head cream-white. Thorax greyish, the tegulae partly cream-white. Forewings with the costa and dorsum chiefly brownish fuscous, the discal area being cream-whitish to beyond the middle, forming a broad undulating streak, commencing at the middle of the base, dilated outward and downward towards the dorsum, then again contracted by the encroachment of a semi-circular

fuscous dorsal patch, and thence again depressed nearly to the dorsum where it blends with a pale ferruginous streak which is continued nearly to the apex; three oblique white costal streaklets above it and a slender whitish terminal line below it, the latter margined outwardly by a narrow fuscous line around the apex at the base of the greyish cinereous cilia, a fuscous shade running through them around the apex. Exp. al. 11 mm. Hindwings and cilia grey. Abdomen [missing]. Legs whitish, the tibiae obliquely streaked externally, and the tarsi conspicuously banded with fuscous, the five bands diminishing in width from the base.

Type ♀ (25653) Mus. Wlsm.

HAB. OAHU: near head of Kawaioloa Gulch, iv. 1893. Unique.

# 17. AGONISMUS, gen. nov.

(ἀγωνισμός = rivalry.)

Type *Agonismus flavipalpis* Wlsm.

Antennae (♀)  $\frac{2}{3}$ , serrate on outer half, smooth towards base; basal joint subpectinate, slightly enlarged outwardly. Labial Palpi scarcely recurved, divergent; terminal joint short, obtuse; median joint slightly enlarged outwardly. Maxillary Palpi minute, dependent. Haustellum well-developed. Head and Thorax smooth; face receding. Forewings scarcely three times as long as wide, costa slightly sinuate, apex obtusely rounded, not sensibly depressed, dorsum rounded: neuration 12 veins; 7 and 8 stalked, connate with 9, 7 to costa, 6 separate; 1<sup>b</sup> basally furcate. Hindwings half as broad as the forewings, lanceolate, acute, with rounded dorsum and straightish costa; cilia  $2\frac{1}{2}$ : neuration 8 veins; 6 and 7 stalked, cell widely removed from costa through coincidence of radius with media before origin of 6+7, other veins separate. Abdomen smooth; ♀ with ovipositor extruded. Legs slightly clothed with long appressed hairs which project beyond the hinder spurs.

Intermediate between *Hyposmocoma* Btl. and *Batrachedra* Stn.

## 64. (1) *Agonismus flavipalpis*, sp. nov. (Pl. XV. fig. 15).

Antennae fuscous, yellow at the base beneath, annulate beyond with pale yellow. Palpi bright yellow, with two fuscous spots beneath the short terminal joint. Head shining fuscous. Thorax purplish fuscous. Forewings rich shining reddish purple, dusted with golden ochreous scales, a pale ochreous dorsal streak arising at about one-fifth from the base and reaching to the fold; cilia around the apex bright purple, fading to dull tawny grey about the tornus. Exp. al. 9 mm. Hindwings dull greyish fuscous; cilia dark tawny greyish. Abdomen fuscous. Hind Legs fuscous, with orange-yellow bands round the tarsi.

Type ♀ (28468) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000 ft., v. 1896. Two specimens.

**65.** (2) *Agonismus coruscans*, sp. nov. (Pl. XV. fig. 16).

Antennae brownish fuscous, yellowish on the basal joint beneath. Palpi pale yellowish. Head shining, bronzy fuscous. Thorax bronzy brownish. Forewings bronzy brown, with a slight purplish gloss, sparsely sprinkled with shining golden scales, of which there is an outwardly angulated transverse band before the apex, followed by shining metallic cupreous and golden scales around the termen and apex and in the base of the purplish grey cilia. Exp. al. 9—10 mm. Hindwings dark purplish grey, with scarcely paler tawny grey cilia. Abdomen bronzy fuscous. Legs bronzy fuscous, with whitish ochreous spurs and tarsal spots.

Type ♂ (25745) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., 17—20. VII. 1892. Two specimens.

This species differs from *flavipalpis* in the much less purple forewings and in the less conspicuous concentration of the golden scales and the rather paler palpi.

**66.** (3) *Agonismus argentiferus*, sp. nov. (Pl. XV. fig. 17).

Antennae shining, bronzy. Palpi silvery white; terminal joint less than half the length of the median. Head and Thorax bronzy. Forewings shining, pale bronzy, an obscure whitish line from the base along the fold to about one-third; the apex of the wing shining silvery white, produced in a slender line along the base of the costal cilia; cilia bronzy at the apex, greyish at the dorsum. Exp. al. 9 mm. Hindwings and cilia brownish grey. Abdomen brownish grey. Legs bronzy grey, with white tarsal bands.

Type ♀ (27392) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895. Two specimens.

**18.** ELACHISTA Tr.

ELACHISTA Tr., Schm. Eur. IX. (2) 177, No. 153 (1883), *Auct.*

Meyr., HB. Br. Lp. 640, 664, No. 7, fig. (1895): Pr. Linn. Soc. NSW. XXII. 299, 331—2, No. 13 (1897).

The geneonym "*Elachista*" Auct. is used incorrectly, but its present application is well-known, and at the present moment I am not disposed to revise all the geneonymy involved before a correction can be made.

**67.** (1) *Elachista spilota*, sp. nov. (Pl. XV. fig. 18).

Antennae pale brownish fuscous. Palpi white, the terminal joint speckled with fuscous beneath, the outer end of the median joint fuscous. Head and Thorax brownish fuscous. Forewings bronzy brownish fuscous, with silvery white spots; one square, resting on the middle of the fold, another, also square, on the dorsum at the end of the fold; between these a short outwardly oblique costal streak, a small costal spot between

this and the apex and a larger spot at the apex; cilia brownish fuscous. Exp. al. 7 mm. Hindwings and cilia brownish fuscous. Abdomen fuscous. Legs pale cinereous.

Type ♂ (28405) Mus. Wlsm. [injured when being figured].

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

**68.** (2) *Elachista longisquamella*, sp. nov. (Pl. XV. fig. 19).

Antennae greyish fuscous. Palpi greyish fuscous, the median and apical joints tipped with white. Head and Thorax greyish fuscous. Forewings greyish fuscous, with a short straight white costal streak just beyond the middle, diffused outward at its lower extremity in a series of scattered white scales towards the dorsum; a few white scales about the end of the cell are equidistant between this streak and a white transverse band from costa to tornus consisting of very long narrow scales subequal in length to the width of the fascia; cilia greyish fuscous, paler on their outer half and about the tornus. Exp. al. 6 mm. Hindwings and cilia brownish grey. Abdomen fuscous above, whitish beneath; the sides of the anal tuft ochreous. Legs blackish, hind tarsi spotted with whitish.

Type ♀ (25357) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., ix. 1892. Two specimens.

**19.** STAGMATOPHORA HS.

= *PYRODERCES* (Z., MS.) HS.; = *LABDIA* Wkr.; = *PROTEROCOSMA* Meyr.

Type 1. *Oecophora hydeniella* FR. (HS. 1853).

STAGMATOPHORA HS., SB. Schm. Eur. v. 13, 49, No. 87; vi. Pl. XIII. 27—28, expl. p. vii (1853); Stgr-Wk., Cat. Lp. Eur. 321, No. 274 (1871); Hein-Wk., Schm. Deutsch. Tin. 425, No. 485 (1876); Meyr., Pr. Lin. Soc. NSW. xxii. 341 (1897); Stgr-Rbl., Cat. Lp. Pal. II. 188, No. 405 (1901); Wlsm. & Drnt., Ent. Mo. Mag. XLII. 196—7 (1906).

Type 2. *Cosmopteryx argyrogrammos* Z. (HS. 1854).

*PYRODERCES* HS., SB. Schm. Eur. [v. 12, 47, No. 80: vi. Pl. XIII. 29—30, expl. p. vii (1853) *MN.*]: v. 212, No. 80 (1854); Stgr-Wk., Cat. Lp. Eur. 321, No. 275 (1871); Hein-Wk., Schm. Deutsch. Tin. 425, No. 486, Tab. Gatt. 9, No. 134 (1876); Meyr., Pr. Lin. Soc. NSW. xxii. 299, 341, No. 15 (1897); Stgr-Rbl., Cat. Lp. Pal. II. 185, No. 391 (1901); Wlsm. & Drnt., Ent. Mo. Mag. XLII. 197 (1906).

Type 3. *Labdia deliciosella* Wkr. (Wkr. 1864).

*LABDIA* Wkr., Cat. Lp. B.M. xxix. 823 (1864); Meyr., Pr. Lin. Soc. NSW. xxii. 341 (1897); Wlsm. & Drnt., Ent. Mo. Mag. XLII. 197 (1906).

Type 4. *Proterocosma triplanetis* Meyr. (Wlsm. & Drnt. 1906).

*PROTEROCOSMA* Meyr., Tr. Ent. Soc. Lond. 1886, 293; Tr. N.Z. Inst. XXI. 174 (1889); Pr. Lin. Soc. NSW. xxii. 341 (1897); Wlsm. & Drnt., Ent. Mo. Mag. XLII. 197 (1906).



**69.** (1) *Stigmatophora* (*Proterocosma*) *incertulella*, Wkr. (Pl. XV. fig. 20).  
*Gelechia incertulella* Wkr., Cat. Lp. B.M. xxix. 658—9 (1864).

Antennae pale fawn, with fuscous spots above. Palpi pale fawn-ochreous, with six blackish bands, three on the median joint and three on the terminal. Head and Thorax pale fawn. Forewings pale fawn, with a small blackish spot below the costa at one-sixth, a second, pale-margined, a little above the middle of the wing, a third at the end of the cell, pale-margined above and beneath by pale fawn-ochreous lines and preceded by a slight costal shade; two oblique pale lines arise from the dorsum, one in the middle, the other before the tornus, and a blackish ocelloid spot, margined with pale fawn-ochreous at the apex, is followed by a short streak in the pale fawn cilia which are also shaded with fuscous below it. Exp. al. 13 mm. Hindwings pale fawn-grey; cilia fawn-ochreous. Abdomen pale fawn. Legs pale fawn ochreous, the tibiae and tarsi obliquely banded with fuscous externally, as are also the sides of the abdomen beneath.

Type ♀ (unset) Mus. Br. [Caenotype ♀ (26577) Mus. Wlsm.]

HAB. HAWAIIA (SANDWICH IS.)<sup>1</sup>. MAUI: Haleakala, 5000 ft., III. 1894. One specimen (Perkins).

In the forewings veins 7 and 8 are stalked, 5 and 6 out of 7; 6 and 7 are stalked in the hindwings.

[The following species is so closely allied to *incertulella* that it seems advisable to insert the description although the insect has not yet been met with in Hawaiiia.

**69<sup>a</sup>.** (1<sup>a</sup>) *Stigmatophora* (*Proterocosma*) *tridigitella*, sp. nov.

Antennae fawn-grey, slightly spotted with fuscous. Palpi fawn-whitish, with six blackish bands, three on the median and three on the terminal joint. Head and Thorax fawn-greyish. Forewings fawn-greyish, with two small fuscous dots at one-sixth from the base, one below the costa, the other below the fold, each succeeded by fawn-whitish scales; scarcely above the middle of the wing is an elongate blackish spot within the upper origin of a fawn-whitish sharply angulate sagittate streak, pointing outward to another elongate blackish spot at the end of the cell, also narrowly encircled by fawn-white, with two short parallel streaks of the same above and below it; the apex and cilia fawn-white, with three streaks running through them in the form of an inverted anchor, tornal cilia pale fawn-ochreous. Exp. al. 12—16 mm. Hindwings pale rosy grey; cilia pale fawn-ochreous. Abdomen pale fawn. Legs pale fawn, obliquely barred with fuscous.

Type ♀ (2859) *Rapa*, Mus. Wlsm.

HAB. S. PACIFIC—RAPA (= OPARA) ID., "beaten from thatch," 18. IV. 1883 (J. J. Walker).—PITCAIRN ID., 1. VI. 1883 (J. J. Walker).

Neuration as in *incertulella* Wkr.]

**70.** (2) *Stigmatophora* *honorariella*, sp. nov. (Pl. XV. fig. 21).

Antennae with the basal joint flattened, a little curved and slightly tufted; pale ochreous. Palpi whitish, with a slight ochreous tinge. Head white, with some slight ochreous scales above. Thorax white; ♂ with ochreous lateral expansible hair-pencil.

Forewings rather shining white, with three transverse pale brownish ochreous bands, narrowly margined with dark brown, the first near the base, the second about the middle, the third before the apex, the margins of the latter less pronounced; at the base of the brownish ochreous cilia are a few more brown scales crossing the apex; with a small tuft of erect scales on the underside at the end of the cell. Exp. al. 11 mm. Hindwings shining pale grey; cilia brownish ochreous. Abdomen ochre-brown, white at the sides and beneath. Legs shining white, with transverse brownish ochreous bands, the tarsal joints tinged with ochreous.

Type ♂ (2883) *Pitcairn Id.*, Mus. Wlsm.

HAB. HAWAIIA. [Without locality (Blackburn) Mus. Meyr.] S. PACIFIC. PITCAIRN ID., I. VI. 1883 (J. J. Walker). Two specimens.

Closely allied to *quadrifasciata*, but differing in the paler markings and in the absence of a pronounced subapical band. The presence of the small tuft of scales on the underside of the forewings in the ♂ at once distinguishes *honorariella* from *quadrifasciata*.

**71.** (3) *Stagmatophora quadrifasciata*, sp. nov. (Pl. XV. fig. 22).

Antennae simple, or slightly serrate towards apex, pale ochreous, the basal joint flattened, slightly tufted. Palpi slender, recurved, divergent, the terminal joint longer than the median, both smooth; pale ochreous. Head pale ochreous, the face whitish. Thorax pale ochreous. Forewings narrow, elongate, tapering to an acute apex; shining whitish, with four transverse bands, brownish in the middle, darkened with brownish fuscous scales along their margins; these scales are more or less diffused inward across the bands; the first band is near the base, the second before the middle, the third at three-fourths, and the last, inverted, from the costa at the apex to the tornus; with the exception of this last the bands are scarcely inverted and of even width throughout; a slender fuscous line curves around the apex in the pale ochreous cilia which are somewhat grey-shaded at the tornus and on the dorsum. Exp. al. 12 mm. Hindwings narrower than the forewings, acutely pointed; brownish grey, cilia concolorous. Abdomen brownish ochreous, with transverse silvery lines across the base; silvery whitish beneath and at the sides. Legs pale ochreous, with brownish shade-bands.

Type ♀ (71801) *New Guinea*, Mus. Wlsm.

HAB. HAWAIIA. [Without locality (Blackburn) Mus. Meyr.] S.E. NEW GUINEA: Dinner Id., in the mangrove swamps, VII. 1887 (Kowald). Two specimens.

**72.** (4) *Stagmatophora* ? *sordidella*, sp. nov. (Pl. XV. fig. 23).

Antennae biserrate in ♂; brownish cinereous. Palpi slightly recurved, divergent, median joint slightly longer than the terminal, scarcely more thickened, slender; brownish cinereous. Head and Thorax brownish cinereous. Forewings pale brownish cinereous with brownish fuscous spots and mottling, the latter especially pronounced in

a costal patch at one-third, another at two-thirds, and in an ill-defined oblique ante-apical band; the outer costal patch is produced obliquely downwards and merges in the dark speckling of the wing which separates it from a more distinct dark spot, a little above the dorsum, at two-thirds from the base; this is preceded by others less conspicuous on either side of the fold, but with the exception of the apical fourth through which a dark diffused band passes, the whole wing is thickly speckled with brownish fuscous scales, the scales constituting the markings being generally slightly raised; cilia speckled in the same way as the wings, conforming to the darker area on the dorsum they become brownish grey; on the underside of the ♂ there is a small tuft of raised scales at the end of the cell. Exp. al. 9 mm. Hindwings brownish; cilia brownish grey. Abdomen brownish fuscous. Legs brownish grey with paler spurs.

Type ♂ (26852) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Two specimens.

The terminal joint of the palpi is shorter than usual in this genus, but the material before me does not enable me to refer the species elsewhere.

## 20. APHTHONETUS, gen. nov.

(ἀφθόνητος = unenvied.)

Type, *Aphthonetus diffusa* Wlsm.

Antennae, basal joint slightly enlarged, without pecten; simple, biserrate towards apex. Maxillary Palpi short, appressed to the haustellum. Labial Palpi long, slender, recurved; median joint more or less clothed with slender hair-scales; terminal joint acute, of about equal length with the median. Haustellum scaled towards the base. Ocelli absent. Head and Thorax smooth; face receding. Forewings elongate, lanceolate, costa arched and ciliate outward from one-third, apex obtusely pointed, flexus moderately pronounced; surface with scattered groups of more or less raised scales: neuration 11 veins (4 and 5 probably coincident); 6 out of 7 close to apex, 7 and 8 stalked, 7 to costa; media weak. Hindwings narrower than the forewings, lanceolate, flexus pronounced, costa slightly arched before middle; cilia longer than the breadth of the wing: neuration 8 veins; 6 and 7 stalked, enclosing apex; 2, 3, and 4 remote, 5 midway between 4 and 6 + 7. Abdomen somewhat flattened, with naked patches on the basal segments. Legs, hind tibiae more or less hairy.

## 73. (1) *Aphthonetus mediocris*, sp. nov. (Pl. XV. fig. 24).

Antennae pale olivaceous, the underside of the basal joint pale ochreous. Palpi greenish ochreous, shaded with greyish fuscous. Head and Thorax olivaceous grey. Forewings pale greenish ochreous, sprinkled and shaded throughout with olivaceous grey, with a few darker greyish fuscous spots of raised scales distributed about the fold and discal cell; of these the most noticeable are—one about the middle of the fold, with

one on the cell a little beyond and above it, with which are a few dark ochreous scales; this is followed by two others in the same line with it on the cell, and half-way between them, on the extremity of the fold below, is a larger one touching the dorsum; there is an indication of similar darkish spots along the base of the costal and terminal cilia which are greenish grey. Exp. al. 15—18 mm. Hindwings pale slaty grey; cilia inclining to brownish ochreous. Abdomen with a leaden grey spot above at the base, the first three segments beyond it brownish, the posterior segments silvery grey; anal tuft inclining to ochreous. Legs pale ochreous, somewhat shaded with greyish fuscous on the tibiae and first tarsal joints; hind tibiae with pale ochreous hairs above.

Type ♂ (26619); ♀ (28235) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III.—IV. 1894; v. 1896; Olinda (Haleakala), 4000 ft., IV. 1894. Twenty-three specimens.

This is a most difficult insect to describe; its general appearance is a pale yellowish green, with indistinct mottled shading, and small ill-defined raised spots, it has however no very characteristic markings, although certainly distinct from all other species known to me.

**74.** (2) *Aphthonetus fugitiva*, sp. nov. (Pl. XV. fig. 25).

Antennae stout, hoary greyish. Palpi pale hoary grey, dusted with fuscous. Head and Thorax hoary greyish. Forewings hoary greyish-white, spotted and dusted with olivaceous fuscous, some of the spots on the basal half having an admixture of ochreous scales with a tendency to be raised above the wing-surface; it is difficult to say that any spots are more distinct than others, but if such could be selected they would be two costal spots, one before and one beyond the middle (above and between which the cilia, which extend along the whole margin, are very pale ochreous) and another about the end of the fold—the whole wing has thus a mottled appearance without defined pattern; cilia hoary greyish, intermixed with brownish fuscous speckling. Exp. al. 14 mm. Hindwings and cilia shining, leaden greyish. Abdomen shining, pale greyish cinereous, the usual three smooth basal patches being brownish fuscous. Legs unicolorous, shining, pale cinereous.

Type ♂ (27857) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Three specimens.

The two paratypes are in inferior condition, exhibiting no ochreous scales among the darker mottling, but these may well be abraded.

**75.** (3) *Aphthonetus kauaiensis*, sp. nov. (Pl. XV. fig. 26).

Antennae cinereous. Palpi cinereous, dusted externally with fuscous. Head and Thorax cinereous, the latter somewhat dusted with fuscous. Forewings cinereous, dusted with fuscous scales, with a chestnut-brown shade at the base above the fold,

abruptly terminated outward and constituting the inner edge, above the middle, of an oblique fascia of the pale ground-colour; the outer edge of this fascia commencing on the costa at one-third, is more or less clearly defined, obliquely to the dorsum, by a strong chestnut-brown shade, extending thence to the apex but mottled with pale cinereous; a few blackish scales arise below the fold on the outer edge of the pale fascia, and some others about the dorsum at the end of the fold; cilia brownish grey. Exp. al. 10—11 mm. Hindwings and cilia pale greyish. Abdomen dull ochreous towards the base, greyish beyond. Legs very pale ochreous, or cinereous.

Type ♂ (27534); ♀ (27997) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (5) v.—vi. 1894; Halemanu, 4000 ft., (17) v. 1895. Twenty-two specimens.

This species varies much in the contrast between the darker and paler portions of the wing. In some specimens the oblique cinereous fascia dividing the basal from the median portion is quite absent, while in others again the tendency of the shades, at least beyond where the fascia should be, is longitudinal; in intermediate forms the central portion is obscurely outlined and tends to assume the form of a large costal triangle reaching downward to the fold. The head, thorax and cilia are concolorous with the wing, the latter usually partaking of the pale stippling which characterises its lighter portions.

The forewings are somewhat narrower and more pointed than in the allied species *corticolor* and *mediocris*.

**76.** (4) *Aphthonetus corticicolor*, sp. nov. (Pl. XV. fig. 27).

Antennae bronzy brownish. Palpi pale brownish cinereous, shaded with fuscous externally. Head and Thorax brownish fuscous. Forewings dull brownish ochreous, much suffused and mottled with tawny brown and fuscous, with tufts of raised scales; an outwardly oblique tawny brown basal patch is followed by a pale oblique fascia, almost entirely obliterated by fuscous scaling, this is followed by a wider oblique tawny brown band before the middle, diffused outwardly on its lower half and confluent with the regular brown and fuscous mottling which extends to the apex; cilia brownish cinereous, tawny fuscous on their basal half at the termen. Exp. al. 12—13 mm. Hindwings dark brownish grey; cilia brownish cinereous. Abdomen fuscous. Legs brownish cinereous, shaded externally with fuscous.

Type ♂ (26557) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III.—IV. 1894. Five specimens.

**77.** (5) *Aphthonetus fluctuosa*, sp. nov. (Pl. XV. fig. 28).

Antennae and Palpi pale brownish cinereous, the latter with a fuscous ring around the apex of the terminal joint. Head and Thorax dark brown, the former somewhat speckled. Forewings dark brown, shaded with fuscous about the basal half of the fold,

the brown ground-colour being mapped out in one or more bowed-out wavy shades by the intervention of pale brownish ochreous costal patches (one before, one at, and one beyond the middle) more or less diffused across the wing; this is especially noticeable in the third or outer patch, its semicircular extension preceding the dark brown apical region where some pale brownish cinereous mottling occurs, also around the margins and through the cilia; on the dorsum beyond the middle a pale patch is even more conspicuous than those on the costa. Exp. al. 13—15 mm. Hindwings greyish; cilia brownish grey. Abdomen and legs pale brownish cinereous.

Type ♂ (26758) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894; Halemanu, 4000 ft., v. 1895. Two specimens.

The distinction of this species from *corticicolor*, Wlsm., and others is sufficiently obvious when looking at them side by side, but the points of difference are exceedingly difficult to describe, among these the pale dorsal patch may be chiefly relied upon.

**78. (6) *Aphthonetus passerella*, sp. nov. (Pl. XVI. fig. 1).**

Antennae greyish fuscous. Palpi whitish cinereous, shaded with greyish fuscous externally. Head brownish cinereous. Thorax greyish fuscous, with some ferruginous and cinereous scales. Forewings brownish ferruginous, a greyish fuscous transverse band near the base, mixed with a few pale cinereous scales, divides the short ferruginous basal patch from a central ferruginous shade, both of which are much mixed with fuscous beyond the central shade; the ferruginous ground-colour is much mottled with pale cinereous and interspersed with fuscous streaks, a series of four dark fuscous terminal spots running through the greyish fuscous terminal cilia; costal cilia dark fuscous. Exp. al. 8 mm. Hindwings dark grey; cilia tawny grey. Abdomen greyish fuscous. Legs pale greyish.

Type ♂ (26742) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., vi. 1894. Unique.

**79. (7) *Aphthonetus divergens*, sp. nov. (Pl. XVI. fig. 2).**

Antennae brownish cinereous. Palpi pale cinereous, dusted with fuscous externally. Head greyish fuscous; face very pale cinereous. Thorax brownish, tegulae tinged with ochreous. Forewings dull brownish, mottled with pale cinereous on the outer half and with a yellowish ochreous patch at the base, covering one-third of the width of the wing as far as the basal half of the costa, this contains some brown shading and blackish speckling, there is also a blackish shade beneath it along the upper edge of the cell blending with the brown ground-colour below it; the brownish grey cilia are slightly

mottled at the apex in agreement with the mottled outer third of the wing. Exp. al. 12 mm. Hindwings and cilia greyish brown. Legs pale brownish cinereous.

Type ♂ (26183) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 30. v. 1893. Unique.

A single specimen nearly allied to *corticicolor*, Wlsm., and *fluctuosa*, Wlsm., but very distinct in its markings.

**80.** (8) *Aphthonetus bitincta*, sp. nov. (Pl. XVI. fig. 3).

Antennae greyish cinereous. Palpi pale cinereous, dusted with brownish fuscous externally. Head cinereous. Thorax brownish ochreous. Forewings whitish cinereous, mottled with brownish ochreous along the discal area nearly to the apex, the margins conspicuously spotted with dark brown scale-patches which are diffused through the basal half of the pale cinereous cilia; these patches, commencing at about one-third from the base, gradually diminish in size outwardly, the first dorsal being opposite to the first costal, but the second dorsal opposite to the third dorsal, the costal series consisting of about 7, the dorsal series of 4, not including one at the apex; there are some patches of raised scales towards the base, some in the brownish ochreous mottling, some in the upper edge of the first brown dorsal patch. Exp. al. 12—14 mm. Hindwings grey; cilia brownish grey. Abdomen greyish, with a brownish ochreous patch on three segments towards the base. Legs greyish, the tarsi inclining to ochreous.

Type ♂ (28484); ♀ (28282) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000—5000 ft., v. 1896; Olinda (Haleakala), 4000 ft., v. 1896. Eight specimens.

**81.** (9) *Aphthonetus columbella*, sp. nov. (Pl. XVI. fig. 4).

Antennae brownish grey, with a white spot at the end of the basal joint. Palpi whitish, sprinkled with brownish grey. Head and Thorax whitish, much suffused with pale greyish fuscous. Forewings white, sprinkled at the base, across the middle, and on the outer half of the costa with pale greyish fuscous, the outer edge of the basal patch being indicated by a broken oblique darker fuscous band overlapping the fold but not descending to the dorsum; on the median band are some broken dark fuscous blotches above and below the fold, and a dark fuscous blotch lies on the dorsum about the tornus, two small dark spots lying between it and the central band; the dark spots contain raised scales; cilia brownish grey, bestrewed around the apex with fuscous scales at their base. Exp. al. 13—15 mm. Hindwings and cilia brownish grey. Abdomen cinereous, tinged with ochreous towards the base. Legs pale cinereous.

Type ♀ (26102); ♂ (26162) Mus. Wlsm.

HAB. MOLOKAI: above 3000—4000 ft., 30. v.—9. vi. 1893, vi. 1896. Six specimens.

**82.** (10) *Aphthonetus lichenalis*, sp. nov. (Pl. XVI. fig. 5).

Antennae pale greyish brown, the basal joint white beneath. Palpi white, the median joint very hairy, both sprinkled and shaded externally with greyish brown. Head and Thorax stone-white. Forewings stone-white, sprinkled spotted and blotched with greyish brown mixed with fuscous containing raised scales; an ill-defined outwardly oblique basal patch reaches to about one-sixth from the base, and beyond it at about one-third is a darker costal patch, scarcely connected with another beyond the middle, and with an elongate oblique streak crossing the middle of the fold; another conspicuous patch is placed at the tornus, the whole apical portion of the wing, including the stone-white cilia, is thickly spotted with the same colour, two small spots appear on the outer half of the discal cell and a third scarcely beyond its outer extremity. Exp. al. 15 mm. Hindwings and cilia pale brownish cinereous. Abdomen stone-whitish, with a brownish ochreous patch above at the base. Legs pale stone-ochreous.

Type ♀ (26484) Mus. Wlsm.

HAB. LANAI: 2000 ft., VII. 1894. Two specimens.

**83.** (11) *Aphthonetus digressa*, sp. nov. (Pl. XVI. fig. 6).

Antennae yellowish white, the basal joint chalk-white. Palpi, Head and Thorax white. Forewings chalk-white, with a small broken oblique costal streak near the base extending to the fold, a few scales passing below it; at about one-third from the base commences a dark umber-brown mottled shade, almost obliterating the white ground-colour over the remainder of the wing-surface to the apex, in this shade are five or six minute dots of raised dark fuscous scales along the disc and fold; cilia white, with slight brownish shade-spots along their base and around the termen and apex, tornal cilia greyish. Exp. al. 13 mm. Hindwings grey; cilia pale brownish grey. Abdomen dark grey. Legs brownish grey, whitish at the tarsal joints.

Type ♂ (28425) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896; Olinda (Haleakala) 4000 ft., v. 1896. Four specimens.

**84.** (12) *Aphthonetus eleuthera*, sp. nov. (Pl. XVI. fig. 7).

Antennae pale cinereous, faintly barred above with olive-brown. Palpi pale cinereous, the terminal joint touched with olive-brown beneath. Head hoary cinereous. Thorax olive-brown, sprinkled with brownish fuscous. Forewings pale cinereous, much spotted and shaded with olive-brown and brownish fuscous, especially beyond the basal fourth, of which the pale outer side is obliquely bounded by scale-tufts of the darker colour; the brownish fuscous is specially noticeable on the costa at the commencement of the shaded portion of the wing and in two or more tufts towards the dorsum, also



around the apex and termen, where it is much broken up by the pale ground-colour; the cilia correspond with the adjacent ground-colour of the wing, but are speckled around the apex with brownish fuscous. Exp. al. 11 mm. Hindwings and cilia greyish brown. Abdomen pale cinereous, shaded with brownish fuscous. Legs much shaded with brownish fuscous, pale cinereous on the spurs and at the joints.

Type ♀ (27385) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895; Hilo, 2000 ft., XII. 1895. Two specimens.

In the single ♀ from Hilo (28598) the dark shading is broken up into separate spots, those on the margins and apex tending to fuscous, those on the disc olive-brown. The whole specimen is distinctly paler, the ground-colour being hoary cinereous, but I can only regard it as a variety.

Allied to *digressa*, Wlsm., but smaller and much less distinctly marked.

**85.** (13) *Aphthonetus confusa*, sp. nov. (Pl. XVI. fig. 8).

Antennae brownish cinereous, the basal joint fuscous. Palpi cinereous, tinged with brownish fuscous externally, the median joint somewhat rough beneath toward the apex. Head cinereous; face shining, smooth, whitish. Thorax brownish cinereous. Forewings whitish cinereous, much mottled with brownish fuscous and patched with blackish scaling, with tufts of raised scales; a strong greenish yellow tinge at the base diffused and evanescent before the middle, a small brownish fuscous costal spot at one-third from the base is succeeded by a larger costal patch of the same beyond the middle, the apical and plical areas being mottled; the blackish scaling is distributed in a narrow line from the base along the upper edge of the cell and in a broader patch crossing the basal half of the fold and leading on to an elongate patch on the outer end of the cell; cilia pale cinereous obscurely mottled. Exp. al. 13 mm. Hindwings very pale grey; cilia pale cinereous. Abdomen brownish ochreous. Legs whitish cinereous.

Type ♂ (28555) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., v. 1896. Unique.

**86.** (14) *Aphthonetus spurcata*, sp. nov. (Pl. XVI. fig. 9).

Antennae brownish cinereous, the basal joint dark fuscous above. Palpi brownish cinereous, much sprinkled with fuscous. Head fuscous; face cinereous. Thorax fuscous, the tegulae tipped with whitish cinereous. Forewings whitish cinereous, profusely sprinkled and clouded with a mixture of brownish cinereous and fuscous scaling, the latter prevailing in obscure patches along the margins, the former about the discal and apical areas; a discal spot of raised pale cinereous and fuscous scales at about one-third from the base is almost confluent with a similar spot on the fold a little beyond and below it; cilia whitish cinereous, dusted with fuscous on their basal half, becoming pale

brownish cinereous on their outer half. Exp. al. 15 mm. Hindwings pale greyish; cilia pale brownish cinereous. Abdomen pale greyish fuscous. Legs pale brownish cinereous, the tarsi with broad fuscous bands.

Type ♂ (28439) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

**87.** (15) *Aphthonetus plumbifer*, sp. nov. (Pl. XVI. fig. 10).

Antennae ashy grey towards the base, fading to pale cinereous outwardly. Palpi ash-white, sprinkled with fuscous. Head and Thorax ash-white, thickly sprinkled with fuscous; the tegulae tipped with chestnut. Forewings dull stone-whitish, sprinkled with pale greyish fuscous scales, mottled with reddish brown and longitudinally streaked along the middle with short black broken lines; a narrow streak arising at the base of the costa runs outward along the disc, meeting an outwardly oblique costal streak of the same dark fuscous colour at about one-fifth from the base, this streak crosses the fold, not reaching the dorsum, its lower extremity consisting of raised scales; the two streaks are both accompanied by reddish brown shading, which is continued to the dorsum and freely scattered over the median and apical portions of the wing, and in a series of ill-defined costal blotches from middle to apex; the black streaklets, also broken and ill-defined, are chiefly about the middle third of the wing, a single one stretching forward from the outer end of the cell nearly to the termen; about the lower angle of the cell is a small rounded patch of dark leaden grey scales; cilia stone-whitish, speckled with reddish brown and fuscous. Exp. al. 15 mm. Hindwings very pale grey; cilia greyish, inclining to ochreous around the apex. Abdomen yellowish grey. Legs whitish ochreous.

Type ♂ (27039) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., vi. 1894. Unique.

**88.** (16) *Aphthonetus trichophora*, sp. nov. (Pl. XVI. fig. 11).

Antennae pale cinereous, with a slight ochreous tinge. Palpi pale cinereous, the median joint slightly tufted above at its apex. Head pale cinereous. Thorax brownish grey, sprinkled with pale cinereous. Forewings pale hoary cinereous, with greyish-brown sprinkling; this is noticeable at the base, where there are also two spots of slightly darker raised scales, one flexal, the other median; a costal shade, commencing at about one-fourth, extends nearly to the apex, but is broken by speckling of the pale ground-colour, especially on its outer half; along the middle of the fold is a fuscous streak commencing in a tuft of raised scales, scarcely separated from a similar smaller tuft above it, obscurely indicating the inner oblique edge of the more shaded portion of the wing; there are other small brownish-grey spots on the discal area, one before, another beyond and above the middle of the wing, a third at the lower angle of the cell,

followed by a fourth beyond it, but these have all a tendency to be absorbed in dark sprinkling and are indicated chiefly by the raising of the scales and probably unrecognisable in worn specimens; the apex and termen are mottled with greyish brown, cilia pale brownish grey. Exp. al. 13 mm. Hindwings and cilia pale brownish grey. Abdomen cinereous, with brownish ochreous patches above towards the base. Legs very pale cinereous.

Type ♂ (26863) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., vi. 1894. Unique.

Closely allied to *plumbifer*, but separable by its more hairy tibiae and the absence of the black and chestnut markings.

**89.** (17) *Aphthonetus veterella*, sp. nov. (Pl. XVI. fig. 12).

Antennae dark grey, the basal joint considerably widened with thick scales. Palpi hoary whitish, sprinkled with dark grey. Head hoary, with brownish grey sprinkling. Thorax dark brownish grey. Forewings hoary white, sprinkled and streaked with brownish grey and dark greyish fuscous, the latter concentrated in a broad diffused shade from the base along the fold nearly to its extremity, the whole costal and terminal portion of the wing being mottled with diffused scale-groups of the same colour; cilia brownish grey. Exp. al. 12 mm. Hindwings shining, pale grey; cilia pale brownish grey. Abdomen hoary greyish. Legs pale yellowish grey.

Type ♀ (27530) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Unique.

**90.** (18) *Aphthonetus polia*, sp. nov. (Pl. XVI. fig. 13).

Antennae pale cinereous, with a slight ochreous tinge, except on the basal joint. Palpi whitish, dusted along the sides with pale brownish cinereous. Head and Thorax brownish cinereous. Forewings whitish, profusely sprinkled throughout with pale brownish cinereous; cilia whitish, dusted with pale brownish cinereous, inclining to greyish about the tornus. Exp. al. 12 mm. Hindwings pale brownish grey; cilia brownish grey. Abdomen whitish cinereous, with a pale ochreous spot above near the base. Legs whitish, with a slight ochreous tinge.

Type ♂ (26876); ♀ (27991) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895; Mts., 3000—4000 ft., vi. 1894. Two specimens.

Were it not for the palpi this insect might easily be mistaken for a *Coleophora*.

**91.** (19) *Aphthonetus subocellata*, sp. nov. (Pl. XVI. fig. 14).

Antennae pale greyish cinereous. Palpi greyish cinereous, with darker greyish shading externally. Head and Thorax greyish cinereous; the face paler. Forewings ashy grey, with rather darker grey shading and mottling (containing slightly raised scales), more pronounced on the outer two-thirds than on the paler basal third of the wing, which is obliquely margined on the outer side by the more suffused shading; at about one-third from the base a ferruginous inwardly oblique patch rests on the fold and is followed by four small ferruginous spots, three in a line on the disc, the fourth below the middle one a little above the fold; these are faintly ocelloid, being margined by the pale ground-colour; the base of the pale ashy grey cilia is slightly mottled around the apex. Exp. al. 14--16 mm. Hindwings pale grey; cilia pale brownish grey. Abdomen greyish fuscous. Legs pale cinereous, with a slight ochreous tinge.

Type ♂ (28310) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000—5000 ft., v. 1896. Nine specimens.

**92.** (20) *Aphthonetus nemo*, sp. nov. (Pl. XVI. fig. 15).

Antennae pale cinereous. Palpi and Head whitish cinereous. Thorax pale cinereous, darker in the centre. Forewings whitish cinereous, with a basal patch dilated on the fold, russet-brown, shaded with fuscous on the costa and limbus; beyond this the ground-colour forms a pale oblique fascia, dilated inward on the dorsum, distinctly margined with fuscous scaling along its outer edge, which forms the boundary of a distinct russet-brown shade dilated outward to beyond the middle of the wing; in the pale apical third is some fuscous speckling, mixed with russet-brown, a spot at the end of the fold being more noticeable than others above it, a few fuscous scales lying around the margin at the base of the brownish grey cilia. Exp. al. 13 mm. Hindwings and cilia shining whitish grey. Abdomen cinereous, with ochreous basal patches. Hind legs very pale cinereous, without markings.

Type ♂ (28317) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

The palpi of this species are smoother than those of *subocellata* Wlsm.; in its markings it is very distinct from all others and is one of the few which can be said to be easily recognisable.

**93.** (21) *Aphthonetus exsul*, sp. nov. (Pl. XVI. fig. 16).

Antennae pale cinereous, the basal joint olivaceous grey. Palpi pale cinereous, with a slight fuscous shade around the terminal joint near its apex. Head pale cinereous. Thorax olivaceous grey. Forewings olivaceous greyish, sprinkled with pale cinereous, the extreme base and outer two-thirds of the wing somewhat shaded with darker greyish

fuscous in which a large costal triangle is faintly indicated, two spots of raised fuscous scales marking its inner margin, adjacent to the fold on either side; some fuscous scaling is also visible in the apical area and in the base of the cilia, this scaling is also raised at the outer end of the fold; cilia pale greyish cinereous. Exp. al. 13—14 mm. Hindwings and cilia pale greyish cinereous. Abdomen pale cinereous, basal segments ochreous above. Legs pale cinereous, without markings.

Type ♀ (27414) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (1) VII. 1895; Kona, 4000—5000 ft., (4) 4—25. VII. 1892, above 6000 ft., (1) 30. VIII. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892, summit of crater, 8000 ft., (1) 15. VIII. 1892. Eight specimens.

Allied to *subocellata* Wlsm., and *suffusa* Wlsm., from both of which it can be separated by the absence of dark spots beyond the inner margin of the shaded portion of the wing.

In one specimen (25209) the central shading is less conspicuous, but its inner margin is clearly defined; the specimen is however somewhat worn.

**94.** (22) *Aphthonetus albocinerea*, sp. nov. (Pl. XVI. fig. 17).

Antennae whitish cinereous. Palpi whitish cinereous, dusted and tipped with brownish fuscous. Head and Thorax whitish cinereous, sprinkled with pale brownish fuscous. Forewings whitish cinereous, dusted with pale brownish fuscous, especially on the outer two-thirds of the costa and the basal half of the dorsum; at one-third from the base a few darker brownish scales fall into line with an oblique dark brownish fuscous streak lying across the middle of the fold; this is followed by a smaller dark spot resting on the fold and by a few scattered dark brownish scale-spots above and about the tornus; the darker spots contain raised scales; cilia whitish cinereous dusted with pale brownish fuscous toward the apex. Exp. al. 15—18 mm. Hindwings pale brownish grey; cilia with a slight ochreous tinge. Abdomen whitish ochreous, with brownish ochreous patches on the three anterior segments above. Legs whitish ochreous.

Type ♀ (27169) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Halemanu, 4000 ft., V. 1895; Mts., 3000—4000 ft., V.—VI. 1894. Thirty-one specimens.

**95.** (23) *Aphthonetus diffusa*, sp. nov. (Pl. XVI. fig. 18).

Antennae pale ochreous, the basal joint white. Palpi white, sprinkled externally with greyish fuscous. Head and face white. Thorax greyish fuscous; tegulae stone-white. Forewings stone-white, with groups of greyish fuscous scales distributed around the costa and termen, the remainder of the wing-surface faintly mottled with greyish brown, containing raised scales; the first costal patch is at about one-third from the

base, the second a little beyond the middle, the series diminishing in size and distinctness to the apex, those along the termen resting on the base of the stone-white cilia, which are also slightly sprinkled with similar scales. Exp. al. 15—19 mm. Hindwings and cilia pale brownish cinereous. Abdomen whitish, pale brownish cinereous above on its basal half. Legs stone-whitish.

Type ♂ (26662) *Maui*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Halemanu, 4000 ft., V. 1895; Mts., 3000—4000 ft., V.—VI. 1894.—MAUI: Olinda (Haleakala), 4000 ft., (1) IV. 1894. Twenty-five specimens.

Closely allied to *albocinerea*, which differs from *diffusa* in the absence of the tuft of raised scales on the fold at the termination of the first costal patch.

96. (24) *Aphthonetus hirsuta*, sp. nov. (Pl. XVI. fig. 19).

Antennae cream-white. Palpi cream-white, the median joint hirsute above and beneath, the terminal joint of equal length, smooth, slender, erect. Head and Thorax cream-white. Forewings cream-white, with four more or less oblique spots of raised dark brown scales, three along the fold and one on the termen beyond it; there is a faint indication of a small costal spot at one-third in line with the second plical spot; cilia cream-white, sprinkled with brownish scales around their base. Exp. al. 18—20 mm. Hindwings pale shining greyish; cilia with a pale ochreous tinge. Abdomen and Legs cream-white.

Type ♀ (26729) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., V.—VI. 1894. Two specimens.

97. (25) *Aphthonetus humerella*, sp. nov. (Pl. XVI. fig. 20).

Antennae cinereous, the basal joint white, with greyish shading above. Palpi and Head white. Thorax white, shaded with grey. Forewings white, dusted with greyish fuscous and brownish ochreous scales; at the base of the costa is a narrow black streak, broken into three spots, running along the upper edge of the cell, joining at its outer end a greyish fuscous costal spot at about one-fifth from the base; beyond the middle a series of about five diffused brownish spots continues to the apex; below the outer half of the fold are two small diffused brownish spots, followed by a larger greyish fuscous spot at the tornus, beyond which brownish ochreous mottling reaches to the apex and partly over-spreads the greyish white cilia; some of the minute scale-speckles on the outer half of the wing are black. Exp. al. 16—17 mm. Hindwings very pale shining grey; cilia pale greyish cinereous. Abdomen greyish. Legs very pale ochreous.

Type ♀ (28237); ♂ (28344) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., V. 1896. Four specimens.

98. (26) *Aphthonetus puncticiliata*, sp. nov. (Pl. XVI. fig. 21).

Antennae brownish cinereous, basal joint greenish, with a black spot above. Palpi whitish, narrowly shaded with fuscous scales along their outer sides. Head greenish. Thorax greenish, with a black spot above. Forewings dirty whitish, thickly mottled with pale olive-green throughout, with a number of black spots scattered about their surface; one above the fold before its middle, almost touching a second on the fold beyond it; one dorsal near the outer end of the fold, and one between the last two just above the fold; one costal at one-fourth, reduplicated beneath, is followed by a smaller reduplicated spot on the cell below it, two other discal spots following in the same line with its lower half, the last at the extremity of the cell; the costal cilia extend in the direction of the base as far as the first costal spot, these and the terminal cilia are cream-whitish, with a series of black diffused spots along their basal half extending from the middle of the costa around the apex and termen, a conspicuous black upright tornal spot terminating the series. Exp. al. 13—16 mm. Hindwings and cilia brownish grey. Abdomen greenish, ochreous towards the base. Legs whitish ochreous, tibiae with a slight terminal hair-tuft.

Type ♂ (25746) Mus. Wlsm.

HAB. HAWAII: Kona, 4000—5000 ft., 30. VI.—4. VII. 1892, 10. VIII.—IX. 1892; Mt. Kilauea, VI.—VII. 1895. Eight specimens.

99. (27) *Aphthonetus aspersa*, Btl. (Pl. XVI. fig. 22).

*Laverna aspersa* Btl., Tr. Ent. Soc. Lond., 1882, 44, No. 18 (1882)<sup>1</sup>.

Antennae with the basal joint white, the stem faintly tinged with brownish. Palpi chalky white, sparsely dusted externally with brownish scales. Head and Thorax white. Forewings chalky white (not yellowish nor greenish white), with pale chestnut-brown spots of which the more conspicuous are strongly raised and centred with dark fuscous scales; these conspicuous spots are, one about the middle of the fold, obliquely reduplicated above towards the base, one between this and the base, also plical, and one at the end of the fold; others less conspicuous, but partly raised, are scattered over the outer half of the wing to the apex, and on the costa are three oblique spots, one near the base joining the upper edge of the first plical, one before and one after the middle; cilia white, with about four spots along their base. Exp. al. 12 mm. Hindwings and cilia pale greyish brown. Abdomen white, the three basal patches brownish. Legs pale brownish cinereous.

Type ♀ (106: 82. 9) Mus. Br.

HAB. OAHU: Mts., near Honolulu (Blackburn)<sup>1</sup>.

[Two worn specimens collected by Mr Perkins have the spots (such as remain) in precisely similar positions, their ground-colour is however less chalky white and they have apparently fewer chestnut raised scales and spots. HAB. OAHU: Waianae Mts., 2000 ft., IV. 1892 (25105); Kawaihoa Gulch, IV. 1893 (25654).]

**100.** (28) *Aphthonetus elegans*, sp. nov. (Pl. XVI. fig. 23).

Antennae pale brownish ochreous, the basal joint pale grass-greenish. Palpi cream-whitish, the median joint with a short fuscous streak externally at the base, the terminal joint externally pale green, speckled with light brown scales. Head pale green; face cream-white. Thorax pale greenish. Forewings pale grass-green, mottled with cream-white on which are set several patches of light brown scales (some raised), four of these on the discal area, three along the fold, and the remainder distributed around along the costa and dorsum, beyond the middle more or less scattered through the cream-white cilia; an elongate patch of rather darker brown scales occurs at the upper edge of the cell about one-fourth from the base. Exp. al. 18 mm. Hindwings shining, pale grey; cilia pale greyish cinereous. Abdomen brownish ochreous at the base, pale cinereous beyond. Legs whitish, the hairy clothing of the tibiae having a slight ochreous tinge; the anterior legs are streaked and banded with fuscous.

Type ♂ (28554) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000 ft., v. 1896; Olinda (Haleakala), 4000 ft., v. 1896. Three specimens.

**101.** (29) *Aphthonetus sagittata*, sp. nov. (Pl. XVI. fig. 24).

Antennae pale greyish ochreous, the basal joint cream-colour. Palpi light bluish green, with a slender black streak externally on the basal half of the median joint. Head and Thorax cream-colour; the tegulae streaked with green. Forewings light bluish green, with cream-coloured spots and black arrow-shaped spots, containing some raised scales; the black spots are distributed as follows: a small one at the extreme base of the costa, another at the base of the dorsum, the former followed by three costal spots (the first almost contiguous to it, the second at about one-third, the third at a little beyond the middle), with a black length-streak on the cell below it; a series of three on the fold, all formed as arrow-heads pointing outwards (the first at one-third the length of the fold, the second about its middle, the third on the dorsum at its extremity), a reduplicated spot or biangulated streak rests on the termen, reaching nearly to the apex; the pale cream-coloured spots are distributed in connection with the black spots, for the most part on their anterior margins, being slightly raised, in connection with the plical spots; there are also two or three very small ones on the costa before the apex; cilia green about the apex, becoming greyish toward the tornus. Exp. al. 14—16 mm. Hindwings grey; cilia with a greyish ochreous tinge. Abdomen greenish grey, anal tuft ochreous. Hind legs pale ochreous; anterior and middle legs with green tufts on the tibiae, with a black ring around the first tarsal joint, the anterior femora black beneath.

Type ♂ (26820); ♀ (27173) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895; Mts., 3000—4000 ft., v.—vi. 1894. Sixteen specimens.



## 21. RHINOMACTRUM, gen. nov.

(ῥινόμακτρον = a handkerchief.)

Type *Rhinomactrum rutilellum* Wlsm.

Antennae as long as the forewings. Maxillary Palpi small, dependent. Labial Palpi divergent, inclining upward, median joint with expanding scales above and beneath towards its apex; terminal joint slender, naked, shorter than the median. Haustellum well-developed. Head and Thorax smooth. Forewings elongate, of even width throughout as far as the tornus, costa almost straight, apex scarcely depressed, termen oblique, surface with a few slightly raised scales: neuration 11 veins (4 and 5 probably coincident); 6 out of 7, 7 and 8 stalked, 7 to apex. Hindwings narrower than the forewings, elongate, lanceolate, pointed, cilia  $2\frac{1}{2}$ : neuration 8 veins, all separate; 6 and 7 approximating towards base. Abdomen moderate. Legs, hind tibiae with a few slight hairs.

Intermediate between *Neelysia* and *Aphthonetus*.

102. (1) *Rhinomactrum rutilellum*, sp. nov. (Pl. XVI. fig. 25).

Antennae whitish cinereous, with black annulations, the basal joint tawny reddish. Palpi, Head and Thorax tawny reddish, sprinkled with pale cinereous. Forewings tawny red, minutely sprinkled with pale cinereous and irrorated with minute black streaklets, some of which combine to indicate the margins of three ill-defined dull cinereous equidistant spots; one about the middle of the wing, with one before it and another at the end of the cell; on the costa at one-third is a small black streak preceded by another, placed parallel with the costa, and nearly reaching its lower extremity—the black streaklets are evenly distributed about the wing-surface; cilia concolorous, but tending to grey along the dorsum. Exp. al. 13 mm. Hindwings and cilia brownish grey. Abdomen and Legs leaden grey.

Type ♂ (26773) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894. Unique.

103. (2) *Rhinomactrum? scapulellum*, sp. nov. (Pl. XVI. fig. 26).

Antennae dark fuscous. Palpi and Head whitish ochreous. Thorax dark brownish fuscous. Forewings whitish ochreous, with a short straight dark brownish fuscous basal patch followed by two brownish fuscous costal shades, one before, the other larger, beyond the middle; between and below these is a discal spot of the same colour, followed by a smaller one at the end of the cell; a brownish fuscous shade-patch at the apex partially overflows the costal cilia, terminal cilia whitish ochreous. Exp. al. 9 mm. Hindwings and cilia pale grey. Abdomen darker grey. Legs pale greyish, the tarsal joints banded above with greyish fuscous.

Type ♀ (28061) Mus. Wlsm.

HAB. HAWAII: Oloo, ix. 1896. Unique.

The single specimen is badly set, and the neurulation difficult to determine with certainty; it appears to agree with that of *rutilellum*, but the median joint of the palpi is not clothed. The reception of the ♂ will probably justify the description of a new genus for this species.

22. NEELYSIA, gen. nov.

(νέος = new; Ἠλύσια = Elysian.)

Type *Neelysia lignicolor* Wlsm.

Antennae shorter than the forewings, serrate, basal joint without pecten. Maxillary Palpi very short. Labial Palpi long, slender, recurved, divergent; median joint smooth, terminal joint acute, both joints of about equal length. Haustellum scaled towards base. Ocelli absent. Head and Thorax smooth; face receding. Forewings elongate, lanceolate, apex scarcely depressed, obtusely pointed, termen oblique, tornus obsolete, flexus rounded; without tufts of raised scales: neurulation 11 veins (4 and 5 probably coincident); 7 and 8 stalked, 7 to costa; 6 separate; media weak. Hindwings narrower than the forewings, elongate, lanceolate, apex obtusely rounded; ♂ without subcostal hair-pencil; cilia 2: neurulation 8 veins, all separate; 6 and 7 approximating towards base; 3 approximated to 2; 5 approximated to 6. Abdomen moderate. Legs, hind tibiae loosely haired.

The species are generally variable, the ♂ in some species with expansible lateral thoracic hair-pencil. *Neelysia* is probably derived from *Hyposmocoma*, through *Dysphoria* (or an ally), having veins 4 and 5 of the forewings stalked. The loss of a vein in *Neelysia* and *Aphthonetus* is thus indicated as caused by coincidence of these veins. *Aphthonetus* differs in emitting 6 of the forewings from 7, in having 6 and 7 of the hindwings stalked, in the clothing of the median joint of the palpi and the scale-tufts on the wing-surface.

104. (1) *Neelysia cuprea*, sp. nov. (Pl. XVI. fig. 27).

Antennae fuscous. Palpi yellowish ochreous. Head and face yellowish ochreous. Thorax cupreous, with some yellowish scales on the tegulae. Forewings cupreous, with a distinct yellowish ochreous spot on the cell at one-third from the base, obliquely placed, its lower extremity attenuated outwards to the fold; a smaller yellowish ochreous spot lies at the end of the cell with a few scales of the same colour on the costa above and beyond it (in fine specimens a series of minute semi-connected yellowish ochreous dots are visible at the base of the cilia around the apex); cilia brownish cinereous, shaded along their basal half with cupreous. Exp. al. 12—13 mm. Hindwings shining, very pale grey; cilia pale brownish cinereous. Abdomen brownish cinereous. Legs pale yellowish cinereous.

Type ♂ (27051); ♀ (27287) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (4) IV. 1895; Mts., 3000—4000 ft., (3) VI. 1894. Seven specimens.

**105.** (2) *Neelysia tigrina*, Btl. (Pl. XVI. fig. 28).

*Chrysoclista tigrina* Btl., Ann. & Mag. NH. (5. s.) VII. 406—7, No. 50 (1881)<sup>1</sup>.

Antennae brownish grey. Palpi white, with a brownish grey streak along the under side of the median joint. Head straw-white, or ochreous. Thorax straw-whitish, tegulae brown. Forewings bright ochreous, with a straw-white streak from the middle of the base along the lower edge of the cell and along the fold nearly to its outer extremity (this white streak is absent in some varieties); beneath it is a short dark brown basal streak, below the fold, but not touching the dorsum, while above it is a longer dark brown streak commencing at the base of the costa and extended along the upper edge of the cell nearly to the middle of the wing, where after two short inverted dentate interruptions from the white streak below it, it is continued in the form of a blackish elongate dash extending to the end of the cell, with a few blackish scales surrounding a third interruption at the end of the cell; in varieties in which the white streak is replaced by the bright ochreous ground-colour, the two interruptions of the dark costo-basal streak coalesce and isolate the outer portion, and the blackish scales surrounding the third interruption sometimes extend to the costa, forming an outwardly oblique quadrangular patch; the apex of the wing is beautifully marked by a blackish, acutely angled streak, clearly defined on its inner edge, and preceded at its upper extremity by a narrow oblique whitish costal streak; this blackish marginal streak sends out short tooth-like projections into the costal, apical and terminal cilia, with small whitish dots between them at the base of the cilia which are bright ochreous beyond them, tornal cilia brownish grey; in some varieties the bright ochreous ground-colour suffuses the white costal streak and encroaches on the black apical streak, breaking it up into spots and exceptionally almost entirely obliterating it. Exp. al. 12—14 mm. Hindwings and cilia brownish grey. Abdomen dark tawny brownish. Legs brownish grey, with whitish spurs and tarsal annulations.

Type ♂ (120: 81. 7) Mus. Br. [Caenotypes ♀ (26702); ♂ (28497); ♂ (28346) Mus. Wlsm.].

HAB. MAUI: Haleakala (Blackburn)<sup>1</sup>, below 4000—5000 ft., iv.—v. 1896 (Perkins); Olinda (Haleakala), 4000 ft., iv. 1894, v. 1896 (Perkins). Fourteen specimens.

A variable species, but easily separable from any yet described.

**106.** (3) *Neelysia lignicolor*, sp. nov. (Pl. XVII. fig. 1).

Antennae dark greyish brown. Palpi whitish ochreous, the terminal joint much shaded with greyish brown. Head whitish ochreous. Thorax greyish brown, with a dash of bone-whitish down the middle. Forewings with the costal third pale greyish brown, the dorsal two-thirds whitish ochreous, fading to bone-whitish, but sometimes shaded with greyish brown along the fold; an elongate brownish fuscous patch, on the cell about the middle, is followed by a roundish spot of the same colour at the end of

the cell above which is a slight costal shade with an opposite elongate dorsal shade beneath it, the pale dorsal ground-colour extends here to the costa cutting off the apical portion of the wing which is much shaded with brownish fuscous; cilia around the apex rather light ochreous at their base, streaked with brownish fuscous on the costa and blending to greyish brown outwardly around the termen and tornus. Exp. al. 14—16 mm. Hindwings grey; cilia with a tawny brownish tinge. Abdomen dark tawny brownish. Legs tawny brownish, the tarsal joints and spurs bone-whitish.

Type ♂ (26534); ♀ (26536) Mus. Wlsm.

HAB. MAUI: Haleakala, above 5000 ft., (4) III. 1894, 5000 ft., (11) III. 1894, (7) IV. 1894, (22) V. 1896, 4000 ft., (1) V. 1896; Olinda (Haleakala), 4000 ft., (1) IV. 1894. Forty-six specimens.

This species varies considerably, the margins of the different shades of colour being nowhere clearly defined and blending imperceptibly into each other. In some varieties the whitish ochreous dorsal shade obliterates the apical markings, becoming more or less suffused with ochreous towards the apex. The dark shading in the fold is strong in some specimens and almost absent in others, but the discal spots are always distinct.

**107.** (4) *Neelysia fuscodentata*, sp. nov. (Pl. XVII. fig. 2).

Antennae whitish ochreous, shaded above with fuscous scales. Palpi stone-ochreous; the terminal joint as long as the median, slightly sprinkled with fuscous. Head whitish ochreous. Thorax brownish fuscous. Forewings evenly lanceolate, whitish ochreous, streaked and shaded with brownish fuscous; the dark shading extends along the costa from base to apex, but is very narrow before and about the middle of the wing; it overflows the whole of the base, but is more conspicuously condensed on the costa, along the fold and on the base of the dorsum; in the fold it extends nearly to the tornus almost obliterating a rather darker spot of the same colour about the middle of the fold; above and a little beyond this is a more or less conspicuous dark discal spot connected with another at the end of the cell by more or less continuous dark shading; above the outer end of the cell the brownish fuscous suffusion extends to the costa and apex, and narrowly around the termen; cilia brownish grey, with minute subochreous points along their base (these are the only indication of the pale streaks which in many species of this genus run through the terminal and costal cilia). Exp. al. 14 mm. Hindwings pale brownish grey; cilia slightly darker. Abdomen brownish grey, paler beneath. Legs whitish ochreous.

Type ♀ (27500) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895. Two specimens.

Closely allied to *lignicolor* Wlsm., but apparently distinct, presenting a uniform pattern in the two specimens which is not to be found in the very variable series from Maui.

**108.** (5) *Neelysia cleodorella*, sp. nov. (Pl. XVII. fig. 3).

Antennae whitish, faintly annulate with pale tawny. Palpi white, with a slender tawny line along their under side; terminal joint longer than median. Head white. Thorax bone-white, with a tawny spot above. Forewings bone-white, the costal third shaded with tawny brownish as far as the end of the cell; in this costal shade are two white, inverted, dentate incisions, tending to unite and surround a spot of the darker colour at about the middle, with another white incision at its outer end leaving its apex obliquely terminated in a sharp point below the costa, and abruptly terminated in a second darker brownish projection on the end of the cell; a dark tawny brown line lies in the fold on its outer half, followed by some diffuse shading of a paler tint which is also visible along the dorsum; around the apex a dark tawny brown patch covers the costal and terminal margins, sharply angulated at its inner edge by the pale ground-colour and containing six or seven bone-white streaklets, three or four costal and three terminal, at the base of the tawny grey cilia. Exp. al. 12—14 mm. Hindwings grey; cilia tawny grey. Abdomen dark grey. Legs whitish, much shaded with tawny grey, and banded with the same across the tarsi.

Type ♂ (25251); ♀ (25246) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (10) VII., 13. VIII., 8. IX. 1892; Mt. Kilauea, (2) VII. 1895. Twelve specimens.

**109.** (6) *Neelysia anthinella*, sp. nov. (Pl. XVII. fig. 4).

Antennae whitish, barred above with glaucous; basal joint streaked with greyish fuscous above and beneath. Palpi white, streaked with greyish fuscous from base to apex, on the median joint widely, on the terminal joint narrowly beneath. Head and Thorax white. Forewings white, with an ochreous tinge on the terminal area, a pale greyish fuscous streak extends from the base along the costa, depressed and attenuated nearly to the apex, its lower edge indented backward, but confluent with an elongate triangular dark fuscous dash occupying the end of the cell, below which is a narrower dash of the same colour along the upper edge of the fold; a white streak from the costa, very oblique (more so than in *Neelysia repandella*), forms an angle towards the apex at its meeting with the pale median space, the outer edge of which reverts to the tornus; beyond this the apex of the wing is dark fuscous, with three inverted white tooth-like streaklets running through the costal cilia, two or three others being faintly indicated in the ochreous dorsal cilia, tornal cilia pale greyish fuscous. Exp. al. 10—12 mm. Hindwings and cilia glaucous. Abdomen greyish fuscous, anal tuft whitish. Legs whitish.

Type ♂ (26425); ♀ (26455) Mus. Wlsm.

HAB. LANAI: 2000 ft., (3) II. 1894, (2) VII. 1894. Five specimens.

**110.** (7) *Neelysia repandella*, sp. nov. (Pl. XVII. fig. 5).

Antennae brownish fuscous. Palpi white, shaded externally on the median joint with brownish fuscous, which is continued in a slender line along the under side of the terminal joint to its apex. Head and Thorax snow-white; tegulae dark brown. Forewings dark brown, with a broad snow-white streak from the middle of the base, extending a little over the fold and blending at its outer end with a light brownish ochreous wash which nearly reaches the termen and is repeated on the cilia below the apex; from the upper edge of the white median streak three or four small barb-like projections are directed backward; at the commencement of the costal cilia an outwardly oblique streak meets the outer end of the pale median space and reverts at an angle to the tornus; in the dark brown space beyond it are three white streaks through the brown costal cilia and three below them through the ochreous terminal cilia. Exp. al. 9.5—10 mm. Hindwings grey; cilia with an ochreous tinge towards the apex. Abdomen shining grey. Legs greyish, with paler spots at the tarsal joints.

Type ♀ (26149); ♂ (26150) Mus. Wlsm.

HAB. MOLOKAI: about 3000—above 4000 ft., (3) 22. v.—vi. 1893, (1) 19. ix. 1893. Four specimens.

**111.** (8) *Neelysia psaroderma*, sp. nov. (Pl. XVII. fig. 6).

Antennae black. Palpi, median joint black, with a white spot at the apex; terminal joint white, with a few black scales beneath near the apex. Head white above, face blackish. Thorax white, tegulae black. Forewings chalk-white, mottled with black, a black shade from the base along the costa reaches to the costal cilia, its outer half dilated downward, in a broad rather quadrangular patch, to the lower edge of the cell, and beyond the cell partially intermixed with the white ground-colour; a black dorsal shade from the base, also mottled, reaches nearly to the middle, a few spots at its outer end thrown up towards the fold; the apical portion of the wing, including the cilia, black, with three slender inverted white costal streaks and three opposite dorsal ones; the inner edge of this apical shade is indented by a well-defined rectangle of the white ground-colour piercing its middle. Exp. al. 10 mm. Hindwings and cilia pale greyish. Abdomen [missing]. Legs straw-white, tarsi faintly spotted.

Type ♂ (25101) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft., iv. 1892. Unique.

It is nearly allied to *repandella* and *anthinella*, but differs notably in the downward extension of the outer half of the dark costal shade forming a broad half-fascia quite inconsistent with the pattern of those species.

**112.** (9) *Neelysia municeps*, sp. nov. (Pl. XVII. fig. 7).

Antennae whitish ochreous, very faintly annulate with brownish. Palpi, median joint greyish fuscous, whitish ochreous at its apex and along its upper side; terminal joint as long as the median, whitish ochreous, with a slender greyish fuscous line along its under side. Head and Thorax whitish ochreous. Forewings whitish ochreous at the middle of the base, shading to fawn-brown along the dorsum and with a dark brownish fuscous shade commencing at the base and overflowing the costal margin as far as the end of the cell where there is a small arrow-like spot of blackish scales, margined with whitish ochreous, which extends backward along the cell, sending out two short oblique whitish ochreous points upward and backward into the dark costal shade; beyond the end of the cell is a reduplicated blackish line running half-way to the apex, and beneath it are two or three similar lines following the veins, the last of which is longer than the others and lies in the fold; a slender acutely angled whitish ochreous line, leaving the costa at the commencement of the costal cilia, runs nearly to the termen, reverting to the tornus and forming with the dark double line from the cell the figure of an arrow-head; before and behind this the colour of the wing is decidedly fawn-brown, and in the cilia beyond it are six inverted shining whitish cuneiform streaks, three above and three below the apex; cilia brownish grey, tinged with fawn-brown. Exp. al. 14—16 mm. Hindwings and cilia grey. Abdomen greyish. Legs greyish, the tarsi faintly spotted with whitish.

Type ♀ (26652) *Maui*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (1) V. 1894.—MAUI: Olinda (Haleakala), 4000 ft., (2) IV. 1894. Four specimens.

More nearly allied to *paltodorella* than to *agnetella*, differing from both in the darker palpi and paler antennae as well as in the dark costal and pale dorso-apical areas of the forewings.

**113.** (10) *Neelysia paltodorella*, sp. nov. (Pl. XVII. fig. 8).

Antennae bronzy fuscous above, paler beneath. Palpi whitish ochreous, a slender fuscous line along the under side throughout. Head and face bronzy greyish fuscous, a fawn-brown lateral streak above each eye. Thorax brownish fuscous, the tegulae edged with dark fawn-brown. Forewings dark fawn-brownish, shaded with brownish fuscous, a dark fuscous line running along the fold throughout; a dark fuscous shade, commencing about the middle of the cell, is broken into three portions by two pale fawn-ochreous rings encircling the inner and outer thirds of it and forming two oblique elongate suboval spots with a dark space between them; at the commencement of the costal cilia an outwardly oblique whitish ochreous costal streak is attenuated to a point opposite to the middle of the termen where it meets, or nearly meets, a similar streak arising a little beyond it on the dorsum; beyond these streaks are four costal and three or four

terminal short whitish ochreous streaks running through the fuscous cilia. Exp. al. 11—15 mm. Hindwings shining, grey; cilia brownish cinereous. Abdomen dark brownish grey. Legs brownish grey, the spurs and joints whitish ochreous.

Type ♀ (26910); ♂ (27060) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (12) v.—vi. 1894; Kaholuamano, 4000 ft., (10) iv. 1895. Twenty-two specimens.

The Kaholuamano specimens have the head, thorax and forewings much suffused with pale fawn-ochreous and the darker markings are broken up. The same form however occurs among the other series and I can only regard it as a variety.

**114.** (11) *Neelysia fuscofusa*, sp. nov. (Pl. XVII. fig. 9).

Antennae fuscous, with obscure paler bars. Palpi brownish ochreous, more or less shaded externally with fuscous. Head and Thorax varying from brownish ochreous to dark brown; face paler. Forewings dull brownish ochreous, almost entirely suffused with dark fuscous, in some specimens obliterating the always ill-defined markings which consist of the usual two elongate blackish discal spots, the first of which is produced outwardly along the cell and sometimes divided into two parts; another elongate spot is traceable in the fold below and before the first discal; around the apex are very faint ochreous spots at the base of the dark fuscous cilia, but much less clearly indicated than in the two nearly allied species *paltodorella* Wlsm., and *agnetella* Wlsm. Exp. al. 13—14 mm. Hindwings and cilia dark brownish grey. Abdomen brownish fuscous. Legs brownish, with pale tarsal and tibial spots.

Type ♂ (27099); ♀ (27053) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (9) iv. 1895; Mts., 3000—4000 ft., (3) vi. 1894. Twelve specimens.

In its blurred and sometimes almost entirely obliterated markings and less conspicuous terminal and ciliary spots it differs from the other two species mentioned above, but is obviously very nearly allied to *agnetella* which varies somewhat in the same direction. I cannot however regard it as belonging to that species.

**115.** (12) *Neelysia agnetella*, sp. nov. (Pl. XVII. fig. 10).

Antennae dark fawn-brown. Palpi pale ochreous, shaded with fawn-brown externally. Head pale ochreous, mixed with fawn-brown. Thorax fawn-brown, tegulae touched with pale ochreous. Forewings dark fawn-brown, with a pale ochreous streak running from the middle of the base to the lower half of the termen and dilated to a little below the fold in which it leaves a brownish fuscous central streak, some fawn-brown scales before and behind it; immediately above the plical streak is an oblique brownish fuscous discal spot, encircled narrowly by pale ochreous, whence a dark streak



along the cell reaches to a similar oblique ocelloid spot at the end of the cell; above and beyond this is a pale ochreous costal spot whence a dark fawn-brown band runs around the apex and termen, sharply angulated opposite to the apex, embracing the base of the cilia in which are a series of wedge-shaped pale ochreous spots, pointing inward, to the number of four above and four or five below the apex. Exp. al. 11—14 mm. Hindwings grey; cilia brownish grey. Abdomen greyish fuscous. Legs pale cinereous.

Type ♂ (26664); ♀ (26677) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000—above 5000 ft., III.—IV. 1894, v. 1896; Olinda (Haleakala), 4000 ft., IV. 1894, v. 1896. Seventeen specimens.

In some varieties the paler colours are wanting, the wings being entirely suffused with dark purplish fuscous, the central and plical spots being very indistinct, but obscurely surrounded by slightly paler colour. In other varieties the fawn-brown colour assumes a paler shade, obliterating the pale ochreous median streak and more or less suffusing the other paler markings, leaving the darker ones distinctly indicated.

**116.** (13) *Neelysia rotifer*, sp. nov. (Pl. XVII. fig. 11).

Antennae white, with a black streak above from the base, breaking into spots on the outer half. Palpi long, slender, terminal joint as long as the median; white, with a black line along the under side of the terminal joint. Head greyish brown; face white. Thorax light buff-brown. Forewings light buff-brown, a short oblique white streak on the cell at about one-third from the base is followed by a longer oblique white streak, also commencing below the costa, its lower extremity enclosing an elongate oblique black spot about the end of the cell; this is followed by a large cone-shaped silvery white patch resting on the tornus, its apex reaching outward to the middle of the termen, a slender oblique white costal streak from the commencement of the costal cilia running into its upper side; beyond this seven or eight short white streaks radiate outward through the cilia, the two or three lower ones almost touching the tornal patch, the apical ones separated by black terminal dots; a slender white streak along the outer half of the fold is narrowly margined on either side by black scales; cilia pale brownish, fading to whitish cinereous about the tornus. Exp. al. 10 mm. Hindwings pale grey; cilia pale brownish cinereous. Abdomen greyish. Legs whitish, with greyish transverse bands.

Type ♂ (26317) Mus. Wlsm.

HAB. MOLOKAI: 3000 ft., 6. IX. 1893. Unique.

**117.** (14) *Neelysia basivittata*, sp. nov. (Pl. XVII. fig. 12).

Antennae greyish cinereous. Palpi greyish, a white line along the upper side of the terminal joint, the inner side of the median joint also white. Head and Thorax fuscous. Forewings fuscous, with a conspicuous white streak from the base along the

fold nearly to its middle; beyond it are three oblique white transverse streaks on the cell, the outer one forming the inner margin of an elongate blackish spot at the end of the cell, beyond which again are two oblique cuneiform marginal spots, one costal, the other tornal, followed by three costal and two dorsal white streaklets in the greyish fuscous cilia. Exp. al. 12—14 mm. Hindwings and cilia greyish fuscous. Abdomen slender, dark fuscous. Legs pale greyish fuscous, with whitish spots at the joints.

Type ♂ (28285); ♀ (28434) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (3) v. 1896; Olinda (Haleakala), 4000 ft., (1) v. 1896. Four specimens.

**118.** (15) *Neelysia pluviella*, sp. nov. (Pl. XVII. fig. 13).

Antennae dark brownish fuscous, an ochreous streak along the basal joint. Palpi with the median joint greyish fuscous, tipped with whitish grey on its inner side; terminal joint whitish, with a dark line beneath. Head ochreous, shaded with fuscous above, face fuscous. Thorax bright ochreous, tegulae with a fuscous patch. Forewings dark brownish fuscous, shading to blackish, with white streaklets; the first enclosing, except at its lower edge, a large reniform spot of the dark ground-colour about the middle of the cell, the second completely enclosing a smaller spot at its outer end; above and beyond the latter is an outwardly oblique white costal streak, a less conspicuous dorsal streak a little beyond it, in the cilia are four or five dorsal and three costal white streaks; cilia with an ochreous tinge on the termen, blackish at the apex, paler brownish fuscous along the dorsum. Exp. al. 12 mm. Hindwings and cilia brownish grey. Abdomen fuscous. Legs with the hind tibiae whitish ochreous, spurs white, tarsi fuscous with five white spots.

Type ♀ (26236) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., 22. v.—vi. 1893. Two specimens.

This species differs from *ningorifera* Wlsm., in its darker palpi and in its ochreous thorax, and from *petalifera* Wlsm., in the absence of the basal streak as well as in the colour of the head, thorax and palpi.

**119.** (16) *Neelysia ningorifera*, sp. nov. (Pl. XVII. fig. 14).

Antennae black. Palpi pale ochreous; the terminal joint with a line of black scales beneath. Head and face ochreous, black at the sides and sprinkled with blackish posteriorly. Thorax black, with a conspicuous ochreous patch posteriorly. Forewings black, faintly sprinkled with whitish scales outwardly, and with several clear white spots or streaklets; of these the most conspicuous is a clear white costal spot at one-fourth from the apex, an oblique dorsal streak a little beyond it pointing outward; at the end of the cell is an ocelloid spot formed by a slender white streak enclosing a

dense spot of black scales, except at its lower edge ; preceding this are two other white discal streaklets, and beneath the outer one of these is a dorsal streaklet crossing the fold about the middle of the wing ; around the apex are six white streaklets in the dark cilia (three costal, three dorsal), the cilia becoming slightly paler along the dorsum. Exp. al. 11—12 mm. Hindwings and cilia fuscous (slightly paler than the dorsal cilia of the forewings). Abdomen blackish. Legs dark fuscous, with pale ochreous tibial and tarsal spots, spurs pale ochreous.

Type ♂ (28372) ; ♀ (28379) Mus. Wlsm.

HAB. MAUI : Haleakala, 5000 ft., v. 1896. Two specimens.

This species differs from *petalifera* Wlsm., in the absence of the conspicuous white basal streak, and in the form of the white discal spots which are produced into minute streaklets, as well as in the colour of the palpi which at once distinguish it.

**120.** (17) *Neelysia petalifera*, sp. nov. (Pl. XVII. fig. 15).

Antennae leaden grey. Palpi, long slender, the terminal joint as long as the median ; median joint white, terminal tawny fuscous. Head and Thorax fuscous. Forewings tawny fuscous, sparsely bestrewed with snow-white dots and with a narrow snow-white streak occupying the basal half of the fold ; beyond this on the fold is a minute white oblique streaklet, and immediately above it, another on the cell, is followed by a similar one towards the end of the cell ; beyond and above this is a larger white costal spot with another at the tornus below and beyond it, followed by three white terminal dots ; cilia tawny fuscous. Exp. al. 11—12 mm. Hindwings and cilia tawny fuscous. Abdomen fuscous. Legs greyish fuscous, spurs whitish.

Type ♂ (26657) ; ♀ (28327) Mus. Wlsm.

HAB. MAUI : Olinda (Haleakala), 4000 ft., vi., 1894 ; Haleakala, 4000 ft., v. 1896. Three specimens.

**121.** (18) *Neelysia subaurata*, sp. nov. (Pl. XVII. fig. 16).

Antennae ochreous, faintly barred with fuscous. Palpi pale ochreous, slightly shaded with fuscous at the base externally and on the inner side along the terminal joint. Head ochreous, shaded with fuscous, the face paler. Thorax bronzy fuscous, tegulae touched with shining ochreous. Forewings golden yellowish, profusely sprinkled with bronzy fuscous scales ; a small patch of this colour at the extreme base of the costa is followed by a minute elongate spot beneath it, in the fold are three elongate spots of the same, the middle one followed above by a conspicuous ovate discal spot, the outer one having a similar, but smaller and more rounded spot a little above it at the lower angle of the cell ; around the apex are small pale ochreous spots alternating with darker streaks along the base of the brownish ochreous cilia. Exp. al. 11—13 mm.

Hindwings pale grey; cilia with a slight tinge of brownish ochreous. Abdomen brownish ochreous. Legs blackish, hind tibiae and tarsi barred with pale ochreous, spurs pale ochreous.

Type ♂ (27955); ♀ (27943) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Two specimens.

**122.** (19) *Neelysia exaltata*, sp. nov. (Pl. XVII. fig. 17).

Antennae brownish cinereous, the basal joint fuscous above. Palpi white, the median joint shaded with fuscous nearly to its apex externally, the terminal joint tipped with fuscous. Head and Thorax white; tegulae ferruginous; ♂ with expansible, lateral thoracic hair-pencil. Forewings ferruginous, shaded with fuscous towards the apex, with an oblique white streak before the middle, crossing the fold, narrowly black-margined on its outer side; this is followed by an elongate white patch, extending beyond the end of the cell, with a few black scales along its inner and lower margins; a small white costal spot before the apex, another about the apex, and a few white terminal scales above the tornus; cilia ferruginous, tending to brownish grey about the tornus. Exp. al. 12—13 mm. Hindwings rather dark grey; cilia brownish grey. Abdomen dark grey. Legs bronzy fuscous, with white tarsal annulations, the spurs and ends of the tibiae also white.

Type ♂ (26564); ♀ (28471) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000 to above 5000 ft., (1) III. 1894, (11) V. 1896. Twelve specimens.

**123.** (20) *Neelysia poeciloceras*, sp. nov. (Pl. XVII. fig. 18).

Antennae pale ochreous, annulate with dark brownish fuscous. Palpi whitish ochreous, tinged with pale ferruginous. Head and Thorax whitish, with an ochreous tinge; tegulae light ferruginous; ♂ with expansible lateral thoracic hair-pencil. Forewings light ferruginous, with a short ill-defined basal patch and an oblique central fascia, scarcely reaching the costa, dark brownish ferruginous; the broad central band is narrowly margined on either side with black scales, beyond which on the inner side is a narrow, and on the outer side a wide outwardly produced band of yellowish white, the latter containing a small dark spot at the end of the cell, the extreme apex contains a few black scales; cilia ferruginous. Exp. al. 13—14 mm. Hindwings and cilia brownish cinereous. Abdomen brownish cinereous. Legs brownish fuscous, with very pale ferruginous spurs and tarsal annulations.

Type ♀ (26567); ♂ (28501) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000 to 5000 ft., (1) III. 1894, (5) V. 1896; Olinda (Haleakala), 4000 ft., (1) IV. 1894, (1) V. 1896. Eight specimens.

In some specimens the ground-colour is suffused with whitish, the markings appearing more distinct through the loss of the ferruginous ground-colour.

A single ♀ (26658) from Olinda, 4000 ft., iv. 1894, is smaller (exp. al. 10 mm.) and may be distinct.

**124.** (21) *Neelysia rediviva*, sp. nov. (Pl. XVII. fig. 19).

Antennae greyish fuscous. Palpi whitish, the median joint shaded externally with greyish fuscous nearly to its apex. Head whitish, more or less shaded with ferruginous. Thorax ferruginous; ♂ with expansible lateral hair-pencil. Forewings whitish, profusely clouded with shining ferruginous, of which an oblique quadrangular patch appears on the middle of the fold (this is more or less broken up in some of the varieties), and is outlined before and behind by the white ground-colour, which also encircles a small black dot at the end of the cell; a few black scales at the base of the costa and in the base of the apical and terminal cilia which are ferruginous, shading off to grey on the dorsum. Exp. al. 12—14 mm. Hindwings and cilia pale grey. Abdomen greyish. Legs pale ochreous, with fuscous tarsal and tibial bands.

Type ♂ (27371); ♀ (27117) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (3) iv. 1895; Mts., 3000—4000 ft., (1) vi. 1894. Four specimens.

The palpi of this species are smooth throughout, in this respect it differs from *poeciloceras*, which it greatly resembles. The spot at the end of the cell is scarcely traceable in some specimens, and the white scaling, which probably represents the real ground-colour, is in some specimens almost entirely obliterated.

**125.** (22) *Neelysia ningorella*, sp. nov. (Pl. XVII. fig. 20).

Antennae cinereous. Palpi fuscous, whitish at the end of the median joint, terminal joint with a whitish streak along the upper side. Head ♂, snow-whitish: ♀, rusty brown. Thorax ♂, snow-white, tegulae dark fawn-brown, with expansible lateral hair-pencil: ♀, rusty brown in front, whitish ochreous posteriorly, the tegulae similarly divided. Forewings ♂, bright brown, with several short longitudinal dark umber-brown striae scattered about their surface; a narrow patch of this colour occurs at the base of the dorsum, and is immediately succeeded by an elongate snow-white dorsal streak reaching to two-thirds, this is biangulated at its upper edge, the angles crossing the fold before and beyond its middle; above and beyond the outer angle is a small detached white dot on the cell, succeeded by another at the end of the cell containing a blackish central dot; around the apex and termen is a series of dark brownish fuscous spots at the base of the cilia, a few white scales accompanying them, especially towards the tornus; cilia brownish cinereous: ♀, rusty brown, the dorsal streak varying from pale

brownish ochreous to tawny fuscous, its angles and the discal spots remaining white as in the ♂. Exp. al. 13—14 mm. Hindwings pale greyish; cilia pale brownish. Abdomen brownish cinereous. Legs dark brownish, with whitish tarsal and tibial annulations.

Type ♂ (26636); ♀ (26622) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft. and above, III.—IV. 1894. Three specimens.

The variation is probably individual rather than sexual.

**126.** (23) *Neelysia nemoricola*, sp. nov. (Pl. XVII. fig. 21).

Antennae cinereous, faintly annulate with white. Palpi whitish, the median joint shaded nearly to the apex externally. Head and Thorax white; tegulae rust-brown; ♂ with expansible lateral thoracic hair-pencil. Forewings rust-brown, a broad cream-white dorsal streak, from the base to the end of the fold, throws up two slight oblique excrescences at its upper edge, one before and one beyond the middle, but these are not clearly defined; a small dark spot at the end of the cell is half encircled by a narrow line of white; a few whitish scales appear in the base of the terminal cilia which are brown at the apex, at the tornus yellowish grey. Exp. al. 13 mm. Hindwings shining pale grey; cilia yellowish grey. Abdomen greyish. Legs whitish ochreous, with broad pale fuscous tarsal bands.

Type ♀ (26369); ♂ (26368) Mus. Wlsm.

HAB. MOLOKAI: forest above Pelekunu, 21. IX. 1893. Two specimens.

This would be difficult to separate from some varieties of *argyresthiella* were it not for the smooth palpi which readily distinguish it. It approaches closely to *ningorella*, but the dorsal streak reaches to the base, and the unevenness on its upper edge is much less marked, while the spot at the end of the cell is certainly less conspicuous and the cilia are decidedly more inclined to yellowish grey in both wings, giving a brighter and paler appearance to the hindwings than can be found in the Maui species.

**127.** (24) *Neelysia argyresthiella*, sp. nov. (Pl. XVII. fig. 22).

Antennae fawn-brown, annulate with creamy white. Palpi cream-white, the median joint externally brown nearly to its apex, which is somewhat expanded by hair-scales. Head and Thorax cream-white, tegulae brown; ♂ with expansible lateral hair-pencil. Forewings cream-white, strongly smeared with fawn-brown and sprinkled with fuscous scales, except on the dorsal space below the fold; on the middle of the wing is an oblique elongate darkish brown patch, extending a little across the fold, a blackish ocellate spot at the end of the cell, a few brownish and fuscous ill-defined spots lie on the costa and termen and at the apex at the base of the pale brownish ochreous cilia.

Exp. al. 10—13 mm. Hindwings pale shining grey; cilia pale brownish cinereous. Abdomen pale brownish grey. Legs creamy whitish, broadly banded with brownish fuscous.

Type ♂ (25675); ♀ (25815) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (2) IV. 1895; Mts., 3000—4000 ft., (4) VI. 1894.—OAHU: near head of Kawailoa Gulch, (1) IV. 1893; Waianae Mts., about 2000 ft., (2) IV. 1893.—HAWAII: Kona, 2000 ft., (1) VI. 1892, 5000 ft., (1) 30. VI. 1892, 4000 ft., (2) 13—17. VIII. 1892, 3000 ft., (2) IX. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892; Olaa, (1) IX. 1896; Hilo, 2000 ft., (1) XII. 1895. Nineteen specimens.

**128.** (25) *Neelysia mactella*, sp. nov. (Pl. XVII. fig. 23).

Antennae pale ochreous. Palpi whitish, median joint shaded with fuscous externally nearly to its apex, which is widened with projecting scales. Head and Thorax whitish ochreous; tegulae shining, brownish ochreous; ♂ with expansible lateral thoracic hair-pencil. Forewings shining, brownish ochreous, more or less sprinkled with blackish, and sometimes with a few white scales tending to run in lines; an elongate fuscous spot in the middle of the fold is sometimes dilated obliquely upward; cilia at the apex and termen shining brownish ochreous, on the dorsum pale yellowish grey. Exp. al. 11—12 mm. Hindwings shining, very pale grey; cilia pale yellowish grey. Abdomen brownish ochreous. Legs whitish ochreous, with fuscous shade-bands.

Type ♂ (27156); ♀ (26784) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (7) V.—VI. 1894.—OAHU: Waianae Mts., above 2000 ft., (1) IV. 1892.—MOLOKAI: about 4000 ft., (2) 22. V. 1893. Eleven specimens.

Perhaps allied to *poeciloceras*, but smaller and more slender with distinctly ochreous colouring. Two specimens from Molokai (26233—4) would only be separable from this series through their slightly larger size, one of them having also slightly darker hindwings, but in the absence of better evidence to the contrary I can only regard them as varieties.

**129.** (26) *Neelysia tischeriella*, sp. nov. (Pl. XVII. fig. 24).

Antennae brownish fuscous. Palpi pale ochreous, shaded with fuscous externally on the median joint. Head and Thorax bright orange-ochreous; ♂ with expansible lateral thoracic hair-pencil. Forewings bright orange-ochreous, shaded with brownish fuscous along the costal half of the wing, but not below the fold; this costal shading is somewhat condensed at the base, but diluted and diffused to the apex; there is no indication of discal spots; cilia orange-ochreous at the apex, shading to pale grey on

the dorsum. Exp. al. 10 mm. Hindwings and cilia shining, pale grey. Abdomen greyish. Legs pale greyish, with brownish fuscous tarsal bands.

Type ♂ (27901); ♀ (27902) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Five specimens.

**130.** (27) *Neelysia complanella*, sp. nov. (Pl. XVII. fig. 25).

Antennae brownish ochreous, with very faint pale annulations. Palpi, Head, Thorax, and Forewings unicolorous brownish ochreous; cilia greyish ochreous on the dorsum. Exp. al. 10 mm. Hindwings pale grey; cilia very pale brownish ochreous. Abdomen pale brownish ochreous. Legs whitish ochreous.

Type ♂ (26129) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 13. VI. 1893; about 4000 ft., VI. 1893. Two specimens.

**131.** (28) *Neelysia sciurella*, sp. nov. (Pl. XVII. fig. 26).

Antennae brown. Palpi ferruginous, paler on the inner sides. Head and Thorax brownish ferruginous. Forewings shining, brownish ferruginous, cilia shading to dark grey; a small plical spot is noticeable, but no other markings are to be found on the wing-surface. Exp. al. 11 mm. Hindwings and cilia dark grey. Abdomen dark grey. Legs dark grey, with faintly paler tarsal spots.

Type ♂ (26684) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., IV. 1894. Unique.

**132.** (29) *Neelysia incongrua*, sp. nov. (Pl. XVII. fig. 27).

Antennae fuscous. Palpi smooth, the terminal joint not longer than the median; pale ochreous. Head pale ochreous. Thorax, Forewings, and cilia unicolorous fawn-brown, without trace of any markings; underside greyish fuscous, the cilia showing a paler brown tint. Exp. al. 11—12 mm. Hindwings and cilia dark greyish brown; underside as in the forewings. Abdomen greyish brown. Legs greyish fuscous, with faint pale tarsal spots.

Type ♂ (26613); ♀ (26572) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 to about 6000 ft., III.—IV. 1894, V. 1896. Three specimens.

An inconspicuous species differing from all others in tone of colour combined with absence of markings; it should be easily recognised.



**133.** (30) *Neelysia semifusa*, sp. nov. (Pl. XVII. fig. 28).

Antennae blackish. Palpi pale ochreous, the terminal joint blackish beneath and at the apex. Head pale ochreous. Thorax dull ochreous. Forewings dull ochreous, with a suffused dark fuscous shade along the costa, becoming less conspicuous outward, but continued to the apex and faintly traceable around the termen to the tornus, where there is a small dark fuscous spot; cilia dull ochreous, shading to fuscous on the dorsum. Exp. al. 10 mm. Hindwings dark leaden grey; cilia tawny grey. Abdomen greyish fuscous. Legs greyish fuscous, with paler tarsal spots.

Type ♀ (26096) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., VI. 1893. Two specimens.

**134.** (31) *Neelysia terminella*, sp. nov. (Pl. XVIII. fig. 1).

Antennae dark umber-brown. Palpi umber-brown, whitish on their inner sides and externally at the apex of the median joint, which is widened by expanding scales. Head and Thorax umber-brown; ♂ with expansible lateral thoracic hair-pencil. Forewings umber-brown with a faint tawny suffusion and minute pale sprinkling; in the fold beyond its middle are two minute whitish dots, the space between them being a little darker than the ground-colour; a few whitish ochreous scales along the termen and at the apex in the base of the tawny brownish cilia are accompanied by one or two minute whitish scale-dots a little below the apex. Exp. al. 12 mm. Hindwings and cilia dark tawny grey. Abdomen dark tawny fuscous, anal segments whitish ochreous. Legs umber-brown, with pale spurs and tarsal annulations.

Type ♂ (26593) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III. 1894. Unique.

At first sight this might be regarded as a somewhat faded specimen of *Hypsomocoma fuscopurpurea*.

**23.** DYSPHORIA, gen. nov.

(δυσφορία = indignation.)

Type ♂ ♀ *Dysphoria semicolon* Wlsm.

Antennae shorter than the forewings; slightly serrate, uniciliate ( $\frac{1}{2}$ ); basal joint somewhat flattened, without pecten. Maxillary Palpi short, dependent. Labial Palpi recurved, slightly more slender in the ♀ than in the ♂; median joint with appressed scales; terminal joint scarcely as long as the median. Haustellum moderate, scaled. Head and Thorax with appressed scales; face smooth. Forewings elongate, apex obtusely pointed, termen obliquely rounded; without tufts of raised scales: neuration 12 veins; 7 and 8 stalked, 7 to costa; 6 approximated to 7, remote from 5; 4 and 5 connate or short-stalked; 3 approximate to 4; media weak, from between 6 and 7 to

beyond 11. Hindwings not broader than the forewings, obtusely lanceolate; cilia 1; ♂ with strong subcostal hair-pencil above: neuration 8 veins; 6 and 7 separate, approximating towards base; 5 remote from 6, connate or stalked with 4, or sometimes 4 and 5 closely approximated; 3 equidistant between 4 and 2; 8 free. Abdomen somewhat depressed; ♂ with genital segments recurved, strongly developed; ♀ with ovipositor extruded. Legs, hind tibiae with long dense hairs above.

**135.** (1) *Dysphoria semicolon*, sp. nov. (Pl. XVIII. fig. 2).

Antennae ochreous, faintly spotted above with brownish fuscous, the basal joint brownish fuscous above nearly to its apex. Palpi pale ochreous, the median joint with a broad brownish fuscous streak extending beyond its middle on the outer side, followed by a spot of the same colour near the apex which partly extends around the inner side, a brownish fuscous ring around the base of the terminal joint. Head tawny, face shining greyish. Thorax dark tawny. Forewings dark tawny, with a bronzy gloss; a plical spot at one-third from the end of the fold, followed by a discal spot above it, and another at the end of the cell, are but faintly indicated in a darker shade by a few cinereous scales, sometimes noticeable at their outer edges; cilia tawny, with a slight ochreous tinge on their outer half. Exp. al. 18—20 mm. Hindwings pale, shining, tawny grey, becoming lighter towards the base; cilia tawny brownish grey; ♂ with a pale ochreous subcostal hair-pencil. Abdomen brownish grey. Legs pale brownish grey, tarsi shaded above between the joints.

Type ♂ (27923); ♀ (26905) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (22) IV. 1895; Mts., 3000—4000 ft., (7) V. 1894, (12) VI. 1894. Forty-one specimens.

Apart from structural characters the colouring of the palpi at once distinguishes this species from those which resemble it in appearance.

**24.** BUBALOCERAS, gen. nov.

(βούβαλος = buffalo; κέρας = horn.)

Type *Bubaloceras subburneum* Wlsm.

Antennae ♂, biserrate, the basal joint strongly curved, flattened and dilated, with well-developed pecten. Maxillary Palpi short, inverted. Labial Palpi very long, strongly recurved, terminal joint longer than median, the latter slightly clothed beneath. Haustellum well-developed, scaled. Head and Thorax smooth. Forewings elongate, acutely lanceolate: neuration 12 veins; 7 and 8 stalked, 7 to costa. Hindwings narrower than the forewings, acutely lanceolate; ♂ without subcostal hair-pencil: neuration 8 veins; all separate. Abdomen moderate. Legs with hairy hind tibiae.

Allied to *Hyposmocoma* Btl., but at once separated by the peculiar form of the basal joint of the antennae.

**136.** (1) *Bubaloceras subeburneum*, sp. nov. (Pl. XVIII. fig. 3).

Antennae bone-whitish. Palpi bone-white, a reduplicated brownish line along the terminal joint beneath. Head and Thorax bone-whitish. Forewings bone-whitish, a small blackish spot at the base of the costa and four very faintly indicated brownish ochreous dots, two on the fold, two on the cell, the first plical anterior to the first discal; cilia pale brownish ochreous. Exp. al. 18 mm. Hindwings grey; cilia pale brownish ochreous; ♂ without subcostal hair-pencil. Abdomen grey. Legs, hind tibiae pale brownish ochreous, tarsi bone-whitish, shaded with dark grey above.

Type ♂ (26107) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., 9. VI. 1893. Unique.

**25.** HYPOSMOCOMA Btl.

(ὕψοσμος = subject to the smell; κόμη = hair.)

Type ♂ *Hyposmochoma blackburnii*, Btl. (Btl., 1881).

† HYPOSMOCHOMA Btl., Ann. & Mag. NH. (5. s.), VII. 399—400 (1881).

‡ HYPOSMOCOMA Btl., (emend. Wlsm.)

Antennae shorter than the forewings, slightly serrate towards the apex, basal joint somewhat enlarged outwardly, with a fugitive pecten. Maxillary Palpi short, dependent. Labial Palpi recurved, smooth, terminal joint slightly shorter, as long, or longer than the median joint; the latter sometimes with a few hair-scales towards its tip. Ocelli absent. Haustellum well-developed, scaled. Head and Thorax with appressed scales, the latter sometimes with lateral expansible hair-pencil. Forewings elongate, apex obtusely pointed, termen obliquely rounded; surface with or without tufts of raised scales; ♂ usually with a fringe of hair-scales along vein 12 on the underside, this fringe is sometimes rather strongly developed (e.g. *marginenotata*): neuration 12 veins; 7 and 8 stalked, 7 to slightly above apex (in exceptional specimens of *commensella*, 7 and 8 are closely approximate, almost connate; or stalked in one wing and separated by a slight space in the other wing); remaining veins separate, 3 and 5 both approximated to 4. Hindwings not broader than the forewings, obtusely lanceolate; ♂ with or without expansible subcostal hair-pencil, sometimes strongly developed; cilia (1): neuration 8 veins, all separate; 6 and 7 approximating towards origin; 3 and 5 both approximated to 4; 8 free. Abdomen somewhat depressed; anal appendages well developed. Legs, hind tibiae hairy, the hairs often fugitive.

A variable genus containing many species in a plastic state of development.

Distinctions founded on the relative lengths of the joints of the palpi, the comparative breadth of the wings, the presence or absence of raised scales, and the possession or lack of secondary sexual characters, which at first seemed of morphic value, and to indicate the possibility of subdividing the long series of species included in this genus, had to be abandoned for intermediate forms rendered it impossible to maintain any

subdivision however distinct the subdivision appeared to be when founded on a single species.

The genus *Hyposmocoma* is allied to *Mompha* Hb., *Walshia* Clms., and *Limnaecia* Stn., but the hindwings are broader. Some species (e.g. *radiatella*) are very close to *Limnaecia*, which they much resemble, but the antennae are not ciliate and the head is rougher.

The union of *Stigmatophora* HS., (= *Pyroderces* HS., Meyr.) and *Limnaecia* Stn., Meyr., would justify the inclusion of *Hyposmocoma* in such an extended genus, but as at present constituted *Hyposmocoma* differs from each of these genera as they differ from each other.

Without seeing the ♂ of *Atremaea lonchoptera*, Stgr., I should not be prepared to sink *Hyposmocoma* as a synonym of *Atremaea*, Stgr., but I am at least extremely suspicious that these genera will be proved to be identical.

The ♀ of *Atremaea* is practically indistinguishable generically from the broader-winged forms which are here included in *Hyposmocoma*, the palpi resembling those of certain species in which they are less slender and in which the median and terminal joints are of equal length (e.g. *epicharis*, Wlsm.).

The generic name was obviously given in reference to the subcostal hair-pencil, "presumably a scent-fan" (Btl. *l.c.*). *Hyposmochoma* (χωμα = a heap) would be neuter, and it seems advisable to make the slight correction to *Hyposmocoma* (κόμη = hair), *feminine*, which was doubtless intended.

**137. (1) *Hyposmocoma exornata*, sp. nov.**

137<sup>a</sup>. (1<sup>a</sup>) *exornata*, sp. nov. + *exornata*, var. nov. (Pl. XVIII. fig. 4).

Antennae blackish. Palpi, median joint black, tipped with white, a narrow white line along the under side; terminal joint shorter than the median, white, with a broad black band around its middle. Head whitish primrose. Thorax black, the tegulae tipped with primrose. Forewings black, with an elaborate primrose-yellow pattern along the dorsal half from base to apex; this consists of a line commencing on the fold at the base, dilated downwards along the base of the dorsum and enclosing an inverted black dorsal triangle below the fold, above the outer end of which the primrose plical line throws a projection, upwards and outwards across the cell, before descending to the dorsum, along which it is continued to the apex; opposite to the middle of the dorsum this primrose line forms an angular projection, of which the apex is abruptly terminated at the upper edge of the cell, its centre consisting of an equilateral triangular black patch, a little beyond which, opposite to the tornus, a slender curved projection again emerges from the primrose dorsal streak forming, with the outer and projecting parts of the preceding pattern, a sickle-shaped figure—these patterns are connected throughout and clearly defined; a series of four primrose costal spots occurs in the cilia before the

apex, with three or four smaller primrose spots in the base of the terminal cilia, with these exceptions the cilia are blackish, becoming brownish fuscous towards the tornus; under side blackish, with some whitish spots on the costal cilia and around the termen, where they tend to form a terminal line. Exp. al. 18—21 mm. Hindwings brownish grey; cilia the same, with a paler line along their base; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs blackish, with whitish tarsal spots; posterior legs whitish, with brownish grey hairs above, tarsi with blackish spots.

Type ♂ (25554); ♀ (27409) Mus. Wlsm.

HAB. HAWAII: Kona, 3000 ft., (1) 25. VI. 1892, 4000 ft., (1) VII., (1) 10. VIII., (1) 9. IX. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892; Mt. Kilauea, (1) VII. 1895. Six specimens.

137<sup>b</sup>. (1<sup>b</sup>) *exornata*, Wlsm. + *flavicosta* var. nov. (Pl. XVIII. fig. 5).

Forewings with the costa from near the base to two-thirds primrose-yellow, connected with the plical line by its first upward projection, and thus cutting off a basal triangle of the black ground-colour.

Type ♂ (28742) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Unique.

**138.** (2) *Hypsmocoma oculifera*, sp. nov. (Pl. XVIII. fig. 6).

Antennae brownish fuscous, with faintly indicated paler bands on the outer half. Palpi, median joint brownish fuscous, white towards its apex; terminal joint nearly as long as the median, white, with a brownish fuscous spot on the outer side before the apex. Head and Thorax white. Forewings with the costal portion brownish fuscous, forming two triangular patches connected by a narrow band on the costa before the middle; the basal, crossing the fold but not reaching the dorsum, is smaller than the outer which extends along the termen to the apex and contains some small reduplicated white costal spots before the apex and a small white patch at the end of the cell; the dorsal portion of the wing is shining white from base to tornus, the large triangular central space between the two connected costal patches contains in its middle a conspicuous brownish fuscous patch, resting on but scarcely crossing the fold; cilia white. Exp. al. 18—19 mm. Hindwings brownish grey; cilia pale brownish; ♂ without subcostal hair-pencil. Abdomen brownish grey; anal tuft cinereous. Legs pale cinereous.

Type ♂ (26982) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894. Two specimens.

**139.** (3) *Hypsmocoma nigralbida*, sp. nov. (Pl. XVIII. fig. 7).

Antennae black, a few white scales at the apex of the basal joint. Palpi black, a white ring around the ends of the median and terminal joints, the latter also dusted

with white scales. Head and Thorax white in the middle, black at the sides, the latter with some raised brownish scales posteriorly. Forewings with a black basal patch, scarcely wider on the dorsum than on the costa, slightly indented on the fold; this is followed by a white band, dilated downward from the costa to above the middle of the dorsum, thence extended to the tornus along the dorsum whence it throws up an obtusely angled projection into the black space above it and a second narrow tooth-like projection towards the termen; above this is a white costal spot, a second white spot lying about the middle of the costa (these vary in size); raised tufts of white, or white and ochreous scales occur below the fold; the remainder of the wing, including the cilia, is deep black like the basal patch; tornal cilia tending to brownish grey; under side brownish grey, with a white costal spot before the apex. Exp. al. 16—18 mm. Hindwings and cilia brownish grey; subcostal hair-pencil in the ♂ black. Abdomen brownish grey. Legs black, with white tibial and tarsal annulations; hind tibiae with white spurs and clothed with long greyish hairs above.

Type ♀ (26792); ♂ (26760) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (4) v. 1894, (14) vi. 1894. Eighteen specimens.

**140.** (4) *Hyposmocoma nividorsella*, sp. nov. (Pl. XVIII. fig. 8).

Antennae blackish above, faintly banded with brownish cinereous beneath. Palpi black, the apex of the median joint white; terminal joint nearly as long as the median, strongly sprinkled with white, especially about the base and apex. Head white above, narrowly black at the sides; face black. Thorax white, black at the sides; tegulae black. Forewings blue-black, a broad snow-white streak along the dorsum from near the base to the middle of the termen; without tufts of raised scales; from this white dorsal space, towards the base, a narrow white band extends obliquely nearly to the costa, thus forming a black basal patch; beyond the middle are two dentate projections from the white space encroaching upon the black ground-colour above it; a short white streak lies on the middle of the costa, and a triangular white costal spot before the apex is opposite to the outer extremity of the white dorsal band; cilia blackish towards the apex, brownish grey mixed with white about the tornus; underside brownish cinereous, with a white costal streak before the apex. Exp. al. 16—18 mm. Hindwings brownish grey; cilia very pale brownish; ♂ with a long blue-black subcostal hair-pencil. Abdomen brownish grey. Legs brownish fuscous, with whitish tarsal and tibial annulations; spurs white, with dark lines beneath them; hind tibiae clothed with long greyish hairs above.

Type ♂ (26731); ♀ (26761) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (3) v. 1894, (6) vi. 1894. Nine specimens.

**141.** (5) *Hyposmocoma corvina*, Btl. (Pl. XVIII. fig. 9).

*Laverna corvina* Btl., Ann. & Mag. NH. (5. s.), VII. 405, No. 47 (1881)<sup>1</sup>.

Antennae blackish, basal joint edged with whitish at its extremity. Palpi black, sprinkled with whitish scales, the tips of the median and terminal joints whitish ochreous. Head brownish ochreous, shaded on the front and sides with purplish fuscous (sometimes entirely suffusing the head). Thorax purplish fuscous, sometimes mixed with brownish ochreous. Forewings sooty-black, with whitish or pale ochreous markings; without raised scales; a pale ochreous costal streak near the base communicates with a pale dorsal patch of the same colour, sometimes extending from near the base to two-thirds, its upper edge indented on the middle by a convex extension of the dark ground-colour, with a small triangular ochreous tornal spot; in some varieties the white dorsal patch extends to the tornal spot, but they are usually separated by the dark ground-colour; in other varieties the dark ground-colour encroaches on the pale dorsal patch, limiting it to a cuneate patch below the fold, and thus forming with the costal streak an ochreous L-shaped marking; opposite to the tornal spot is a small triangular pale brownish ochreous (or whitish) costal spot before the apex; cilia blackish, mixed with brownish or ochreous at the tornus; underside brownish fuscous, with a pale ochreous costal spot before the apex. Exp. al. 16—18 mm. Hindwings and cilia brownish grey; ♂ with a dark purplish black subcostal hair-pencil. Abdomen dark brownish grey, shining ochreous beneath; anal tuft paler. Legs blackish, with pale ochreous tibial and tarsal annulations; hind tibiae with long pale ochreous hairs above.

Type ♂ (122: 81. 7) Mus. Br. [Caenotypes ♂ (28375, 26190, 26673) Mus. Wlsm.]

HAB. MOLOKAI: about 4000 ft., (2) 22. v. 1893, (2) VI. 1893 (Perkins).—MAUI: Haleakala (Blackburn)<sup>1</sup>; Olinda (Haleakala), 4000 ft., (2) IV. 1894, (3) v. 1896; Haleakala, 5000 ft., (7) v. 1896 (Perkins). Sixteen specimens.

**142.** (6) *Hyposmocoma discella*, sp. nov. (Pl. XVIII. fig. 10).

Antennae fuscous above, barred with white beneath. Palpi blackish, with a white ring at the end of the median joint; terminal joint tipped with white. Head white, the space around the eyes blackish; face greyish fuscous. Thorax dark tawny fuscous, with a large white patch posteriorly (the white portions of the head and thorax are sometimes undivided). Forewings dark tawny fuscous, with a few white scales at the commencement of the costal cilia and a white dorsal streak from near the base to a little beyond the tornus; this streak is irregularly dentate along its upper edge, throwing four projections upward, the first wider than the others; without raised scales; cilia brownish grey, ochreous at the tornus. Exp. al. 16—20 mm. Hindwings pale, shining, steel-grey; cilia brownish grey, inclining to ochreous; ♂ with a leaden grey

subcostal hair-pencil. Abdomen grey. Legs pale tawny fuscous, with white tarsal annulations.

Type ♀ (27907); ♂ (27908) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (3) IV. 1895. Larva IV. (1) excl. ee v. 1895. Four specimens.

Larva in an irregular case of silk and frass encrusted with miscellaneous fragments (some of them apparently insect remains). "Bred from 'Olapa' (*Cheirodendron*), 'Lehua' (*Metrosideros*), &c., probably lichenivorous" (Perkins).

**143.** (7) *Hyposmocoma divisa*, sp. nov. (Pl. XVIII. fig. 11).

Antennae brownish fuscous. Palpi brownish fuscous, the median joint with a creamy white ring at its apex, terminal joint shaded with whitish scales. Head creamy white, the face and around the eyes dark brownish fuscous. Thorax creamy white; tegulae dark brownish fuscous. Forewings along the costal two-thirds of their width dark brownish fuscous, extending through the apical cilia; along the dorsal third and extending through the terminal cilia creamy white, sparsely bestrewed before the middle with brownish fuscous scales; tornal cilia greyish. Exp. al. 14—18 mm. Hindwings grey; cilia with a brownish tinge; ♂ with a dark grey subcostal hair-pencil. Abdomen brownish grey. Legs brownish cinereous, the tarsi with darker transverse shading.

Type ♂ (27015); ♀ (27233) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Ten specimens.

**144.** (8) *Hyposmocoma partita*, sp. nov. (Pl. XVIII. fig. 12).

Antennae fuscous. Palpi fuscous, sprinkled externally and almost suffused on the inner side with pale ochreous. Head pale ochreous, face grey. Thorax pale ochreous. Forewings with the costal half dark fuscous, sprinkled with pale ochreous scales, and a pale ochreous costal spot before the apex; dorsal half pale ochreous, sprinkled with fuscous scales, the pale colour not extending above the middle of the termen; cilia very pale ochreous, smeared with fuscous about the apex and on the upper half of the termen. Exp. al. 14 mm. Hindwings shining, pale brownish grey, cilia brownish grey; ♂ with a dark leaden grey subcostal hair-pencil. Abdomen greyish fuscous above, whitish ochreous beneath. Legs greyish, scarcely pale-spotted at the tarsal joints.

Type ♂ (28615) Mus. Wlsm.

HAB. HAWAII: Hilo, 2000 ft., I. 1896. Unique.

**145.** (9) *Hyposmocoma trossulella*, sp. nov. (Pl. XVIII. fig. 13).

Antennae greyish fuscous, the basal joint darker than the stem. Palpi greyish fuscous, the upper extremity of the median joint whitish ochreous, the terminal joint



sprinkled with whitish ochreous. Head greyish fuscous, with some whitish ochreous lateral scales above the eyes. Thorax greyish fuscous, with a whitish ochreous spot posteriorly. Forewings greyish fuscous; a broad whitish ochreous streak, commencing narrowly near the base of the costa, is dilated downward and outward to the dorsum which it follows to the termen; a triangular spot of the same colour, lying on the costa above its outer extremity, is preceded by a smaller spot a little beyond the middle of the costa which is very narrowly whitish ochreous between them; a plical spot lies at the upper edge of the pale dorsal streak, but is scarcely distinguishable from the dark ground-colour; cilia greyish fuscous at the apex, partaking of pale ochreous where that colour touches the margins. Exp. al. 12 mm. Hindwings and cilia brownish grey; ♂ with a dark fuscous subcostal hair-pencil. Abdomen whitish ochreous, banded across the middle and on the claspers with greyish fuscous. Legs whitish ochreous, with faint tarsal spots.

Type ♂ (26016) Mus. Wlsm.

HAB. OAHU: Waianae Mts., about 2000 ft., iv. 1892. A single specimen taken on tree-trunks.

**146.** (10) *Hyposmocoma atrovittella*, sp. nov. (Pl. XVIII. fig. 14).

Antennae brown. Palpi white, with three brownish fuscous spots, one at the base and one near the apex of the median joint, the third before the end of the terminal joint. Head and face white, with a greyish median cloud. Thorax brownish fuscous; tegulae white. Forewings white, with a short brownish fuscous basal patch and a broad brownish fuscous shade commencing on the costa at one-fourth from the base, its inner margin descending obliquely outward to the middle of the fold, thence overshadowing the remainder of the wing to the apex, with the exception of the dorsum below the fold and the white terminal cilia. Exp. al. 12 mm. Hindwings and cilia brownish grey; ♂ with a blackish subcostal hair-pencil. Abdomen brownish, anal tuft whitish ochreous. Legs whitish ochreous.

Type ♂ (28054) Mus. Wlsm.

HAB. HAWAII: Oloa, ix. 1896. Unique.

**147.** (11) *Hyposmocoma nebulifera*, sp. nov. (Pl. XVIII. fig. 15).

Antennae annulate with black and pale sandy ochraceous; the basal joint black, with an ochreous spot at its apex beneath. Palpi black, sprinkled with ochreous, the end of the median joint and the base and apex of the terminal joint pale ochreous. Head and Thorax pale sandy ochraceous, the latter with a black spot on the posterior margin, and the tegulae touched with black at each extremity. Forewings pale sandy ochraceous, with two short black patches at the base, one along the costa, the other extending a little further along the dorsum; at about one-fourth from the base a large

blackish cloud-patch, commencing on the costa, extends obliquely outward and crossing the fold, but not reaching the dorsum, obscures the whole remaining surface of the wing with the exception of the dorsum and a small pale ochreous costal spot before the apex; its lower edge is somewhat undulating and contrasts strongly with the pale sandy ochraceous margin and cilia beneath and beyond it. Exp. al. 11 mm. Hindwings brownish grey, the cilia slightly paler; ♂ with a dark greyish subcostal hair-pencil. Abdomen brownish grey above; the under side and anal tuft pale ochreous. Legs whitish ochreous, with fuscous patches on the outer sides of the tibiae, and on the upper sides of the tarsi.

Type ♂ (25861) Mus. Wlsm.

HAB. OAHU: Mts., near Honolulu, 2000 ft., x. 1892. Unique.

**148.** (12) *Hyposmocoma torquata*, sp. nov. (Pl. XVIII. fig. 16).

Antennae dark tawny fuscous above, whitish ochreous beneath, with some bright ochreous scales at the end of the basal joint. Palpi whitish ochreous, shaded externally with tawny grey along the middle of both joints; the terminal joint shorter than the median. Head dark tawny fuscous, with a narrow bright ochreous collar-ring behind. Thorax dark tawny fuscous. Forewings dark tawny fuscous, with a large whitish ochreous dorsal patch at the base, nearly reaching the costa beyond its base; a triangular whitish ochreous dorsal spot at the tornus, its apex pointing outward in the direction of a smaller costal spot of the same colour a little beyond it; cilia dark tawny fuscous, with one or two whitish scales at their base. Exp. al. 10—12 mm. Hindwings coppery brown; cilia tawny; ♂ without subcostal hair-pencil. Abdomen brownish. Legs brownish, with whitish ochreous spurs and tarsal spots.

Type ♂ (27185) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v.—vi. 1894. Two specimens.

**149.** (13) *Hyposmocoma notabilis*, sp. nov. (Pl. XVIII. fig. 17).

Antennae pale ochreous, distinctly barred above with dark brown; basal joint dark brown. Palpi long, slender, recurved, median and terminal joints of equal length; pale ochreous, the terminal joint smeared with dark brown above near the apex. Head brownish ochreous, face pale ochreous. Thorax dark brown. Forewings with a dark brown basal patch, narrow on the costa, dilated obliquely outwards to the dorsum; this is separated from a large quadrangular dark brown costal patch by a broad whitish ochreous oblique band which becomes brownish ochreous along the dorsum and whitish ochreous again about the tornus, where it is scarcely separated from a whitish ochreous inverted ante-apical patch by a brown shade extending to the apex and through the apical cilia; a diffused brownish ochreous spot on the costa at about the middle of the quadrangular costal patch is absent in some specimens; cilia pale brownish ochreous,

bestrewed with dark brown scales. Exp. al. ♀ 17; ♂ 21 mm. Hindwings and cilia brownish grey; ♂ with a short greyish subcostal hair-pencil. Abdomen dark greyish brown above, ochreous beneath. Legs dark brownish, spurs and tarsal joints whitish ochreous; hind tibiae with long brownish hairs.

Type ♂ (26065); ♀ (26195) Mus. Wlsm.

HAB. MOLOKAI: above 3000—above 4000 ft., 31. v.—vi. 1893. Two specimens.

**150.** (14) *Hyposmocoma lebetella*, sp. nov. (Pl. XVIII. fig. 18).

Antennae dark umber-brown. Palpi slender, recurved, median joint whitish ochreous; terminal joint as long as the median, dark brown, sparsely sprinkled with whitish ochreous. Head pale ochreous. Thorax dark umber-brown, tegulae tipped with white. Forewings dark umber-brown, with a broad white subterminal fascia connected with a narrow white dorsal band coming from the base; along the edge of the dark brown colour are a few rich brownish ochreous scales, as also on the costa at the upper extremity of the subterminal fascia; a short outwardly oblique costal streak, at one-fifth from the base, is white, with some ochreous scales, but does not reach the dorsal band, there are also a few ochreous scales about the middle of the costa; cilia rich brownish ochreous, sparsely sprinkled with brown, at the extreme apex dark brown. Exp. al. 18—21 mm. Hindwings grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs brownish grey, hind tibiae broadly banded with dark brown, the joints whitish ochreous.

Type ♂ (26651); ♀ (28520) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., (1) iv. 1894, (3) v. 1896; Haleakala, 4000—5000 ft., (6) v. 1896. Ten specimens.

**151.** (15) *Hyposmocoma tenuipalpis*, sp. nov. (Pl. XVIII. fig. 19).

Antennae brown. Palpi brown, the median joint sprinkled and tipped with pale ochreous; terminal joint as long as the median, slender, sparsely sprinkled and tipped with pale ochreous. Head pale ochreous. Thorax dark umber-brown, tegulae tipped with pale ochreous. Forewings dark umber-brown, with a pale ochreous dorsal band, mixed with some white scales, this band is narrow, but sends up two short angular projections into the brown ground-colour; from the first of these a narrow whitish ochreous band slopes obliquely backward to the costa at one-fifth from the base, while from the outer extremity of the dorsal band an oblique fascia crosses outward to the costa and is much diffused on its outer side with white scales reaching nearly to the termen; on the middle of the costa is a small brownish ill-defined patch; cilia brownish ochreous, somewhat shaded with umber-brown, a few small pale ochreous costal and terminal spots around their base. Exp. al. 14—15 mm. Hindwings grey; cilia

brownish; ♂ without subcostal hair-pencil. Abdomen dark brown. Legs brownish ochreous, tibiae shaded with brownish fuscous.

Type ♂ (26373); ♀ (26367) Mus. Wlsm.

HAB. MOLOKAI: above 4500 ft., (1) VII. 1893; above 4500—5000 ft., (5) 7.—23. IX. 1893; forest above Pelekunu, (2) 21. IX. 1893. Eight specimens.

**152.** (16) *Hyposmocomma commensella*, sp. nov. (Pl. XVIII. fig. 20).

Antennae ochreous, the basal joint brownish fuscous. Palpi brownish fuscous, dusted with pale ochreous, especially on the inner side and around the apex of the median joint. Head brownish ochreous, smeared with bronzy brown above. Thorax dark bronzy brown, touched with ochreous posteriorly and on the ends of the tegulae. Forewings dark bronzy brown, the dorsum and terminal cilia shining ochreous; the upper edge of the pale dorsal streak sends three dentate projections obliquely outward, and above the last, which is produced beyond the tornus, is a pale ochreous costal spot, the greyish fuscous costal cilia beyond it being streaked with ochreous. Exp. al. 18—20 mm. Hindwings shining, pale yellowish grey; cilia ochreous; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs pale ochreous, the tarsi shaded, except at the joints, with brownish grey.

Type ♂ (28101); ♀ (28099) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Eight specimens.

This species is the most generalised of the group, veins 7 and 8 of the forewings, which are normally stalked, being in two specimens (28102—3) separated by a small space (almost connate), while in one specimen (28104) these veins are stalked in one wing and closely approximated in the other. The only ♀ met with has these veins stalked.

**153.** (17) *Hyposmocomma leporella*, sp. nov. (Pl. XVIII. fig. 21).

Antennae ochreous, the basal joint brownish fuscous. Palpi, terminal joint as long as median; ochreous, median joint shaded externally with brownish fuscous. Head brownish fuscous; face shining cinereous. Thorax brownish fuscous; tegulae ochreous except at their base. Forewings ochreous, blotched, mottled and bestrewed with shades of umber-brown and brownish fuscous, of which the most noticeable are a short basal patch, of mixed brownish fuscous and umber-brown, which sends out an acutely projecting angle along the fold to one-fifth from the base; a broad, median, dark umber-brown patch, or band, occupying the middle third of the costa, extends nearly to the dorsum, throwing out an acute angular projection from the end of the cell, and includes in its area two somewhat darker discal patches and one plical patch, followed by a streak along the fold; the outer edge of this patch ascends obliquely outward from

the dorsum before the tornus, and from a little beyond it the apical and terminal area is thickly bestrewed with dark umber-brown, which at intervals runs through the pale ochreous cilia, as far as their middle along the termen, and to their extremities at and above the apex. Exp. al. 24 mm. Hindwings shining, pale bone-grey; cilia pale ochreous; ♂ without subcostal hair-pencil. Abdomen cinereous. Legs cinereous, with broad, pale brownish fuscous, tarsal bands.

Type ♂ (26992); ♀ (28035) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894; Lihue, 4000 ft., VII. 1896. Two specimens.

This species somewhat resembles *Diplosara lignivora* Btl., from which it can be easily distinguished by the absence of raised scales and the smooth terminal joint of the palpi.

**154.** (18) *Hyposmocoma abjecta*, Btl. (Pl. XVIII. fig. 22).

*Laverna abjecta* Btl., Ann. & Mag. NH. (5. s.) VII. 404—5, No. 46 (1881)<sup>1</sup>.

Antennae black, minutely annulate with white, a white ring around the apex of the elongate black basal joint. Palpi black, sprinkled with white scales, a white ring around the apex of the median joint; the apex of the terminal joint, which is longer than the median, white. Head hoary brownish. Thorax dark brown, with a few white scales. Forewings dark bronzy brown, with a white spot on the costa at the base, a bluish white transverse band at one-fifth, indented about the middle on its inner edge, diffused and diluted outward along the dorsum nearly to the tornus and emitting at the upper edge of the dorsal extension a short tooth-like excrescence beyond the middle; before the apex is a broad, oblique, transverse blue-white patch, narrowing inward toward the dorsum and followed on the termen by the dark ground-colour; cilia cream-white, shaded with brown along their basal half and faintly also with grey before their tips; under side lustrous, pale brassy brown, with paler cilia on which the shading, as on the upper side, is conspicuous. Exp. al. 16 mm. Hindwings shining, pale yellowish brown; cilia concolorous. Abdomen pale brownish; shining, yellowish white beneath. Legs dark brown, with white annulations on the tarsal joints.

Type ♀ (48: 77. 43) Mus. Br.

HAB. HAWAIIA<sup>1</sup>. OAHU: Waianae Mts., 2000 ft., IV. 1892. Three specimens.

**155.** (19) *Hyposmocoma blackburnii* Btl. (Pl. XVIII. fig. 23).

*Hyposmochoma blackburnii* Btl., Ann. & Mag. NH. (5. s.) VII. 400, No. 38 (1881)<sup>1</sup>.

Antennae greyish fuscous above, speckled with pale cinereous, laterally, along their basal half. Palpi pale cinereous, sprinkled and clouded with fuscous, a ring of the

same around the median joint near its apex. Head olivaceous fuscous, sprinkled with pale cinereous. Thorax olivaceous fuscous, tegulae sprinkled with cinereous. Forewings yellowish olivaceous brown, a basal patch, margined with dark fuscous, angulated on the fold, has some raised fuscous scales near the dorsum; a dark fuscous patch, at a little beyond the middle of the fold, edged outwardly with whitish scales, somewhat raised, is succeeded by a dark fuscous patch at the end of the cell, another lying on the costa before it a little beyond one-third from the base; at a little beyond two-thirds the outer edge of the olivaceous brown ground-colour is slightly indented below the costa, and edged with dark fuscous scaling below the indentation; the space beyond it whitish, with olivaceous brown sprinkling about the tornus and in the region of the apex, this extends also over the costal cilia, the apical and terminal cilia being brownish ochreous, with olivaceous mottlings along their base and a slender shade-line beyond their middle. Exp. al. 12—19 mm. Hindwings tawny grey; cilia grey, with a brownish ochreous tinge; ♂ with a pale fawn-ochreous subcostal hair-pencil. Abdomen brownish grey. Legs greyish cinereous, tarsi broadly banded with greyish fuscous, the joints conspicuously whitish ochreous.

Type ♂ (123: 81. 7) *Maui*, Mus. Br. [Caenotype ♂ (28535); ♀ (28536) Mus. Wlsm.]

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Halemanu, 4000 ft., V. 1896; Mts., 3000—4000 ft., V.—VI. 1894 (Perkins).—OAHU: Waianae Mts., 2000—about 3000 ft., IV. 1892: "on more or less decayed 'Koa' trunks (= *Acacia koa*)" (Perkins).—MAUI: Haleakala about 4000 ft., various localities—"I think it is connected with dead wood" (Blackburn)<sup>1</sup>; Haleakala, below 4000—5000 ft., V. 1896; Olinda (Haleakala), 4000 ft., V. 1896 (Perkins). Fifty-seven specimens.

The species is extremely variable in colour and markings, the tendency in colour being towards brownish ochreous or fawn-brown; the obliquely placed spots tending to coalescence, the basal patch and the outer edge of the darker colouring tending to be produced outward, frequently forming a streak from the middle of the latter extending to the apex. In the females especially, which are somewhat narrower towards the apex than the males, the lighter brown colouring seems to be more frequently developed, but in a series of fifty specimens showing various intermediate gradations, and varying not inconsiderably in size, I am unable to find any permanent character by which they can be separated into two or more reliable species.

It would not be difficult to divide them into two series by measurement, the smaller form at first sight appearing on this account to be distinct, but both series exhibit the same modification of colouring and are identical in structure and it would not be safe to predict that they could be separated even in the larval stages.

*Hyposmocoma* sp ? (? *blackburnii* Btl.).

HAB. MOLOKAI: 4500 ft., VIII. 1893. (26402 Mus. Wlsm.)

A single specimen in very poor condition indicates that *blackburnii*, or a very closely allied species, occurs in Molokai.

*Hyposmocoma* sp.? (? *blackburnii* Btl.).

HAB. HAWAII: Mt. Kilauea, VII. 1895. (27418 Mus. Wlsm.)

A single specimen, inseparable in appearance from *blackburnii*, differs in having veins 4 and 5 of the hindwings connate in one wing and short-stalked in the other. The specimen is doubtless abnormal, and being unique it might be rash to name it *blackburnii*, since no similar variation in neuration has been found in the long series from Kauai, Oahu and Maui.

**156.** (20) *Hyposmocoma cupreomaculata*, sp. nov. (Pl. XVIII. fig. 24).

Antennae pale fawn-ochreous, with dark brown annulations. Palpi pale fawn-ochreous, much mottled and shaded with dark brown, especially in a ring before the pale apex of the median joint and along the under side of the terminal. Head pale ochreous, mottled with dark brown; face unmottled. Thorax pale fawn-ochreous, speckled with dark brown. Forewings pale fawn-ochreous, speckled with dark brown, with conspicuous dark coppery brown patches; a small spot, at the base of the costa, indicates the upper end of a basal patch dilated outward to the dorsum and clearly defined, at its outer edge, above and below the fold; a second costal patch, a little before the middle of the wing, is followed by another at three-fifths, the latter produced and attenuated downward nearly to the fold, where it precedes a tornal spot of the same colour, tending to be connected with it by scattered scales; a larger, and more conspicuous, outwardly oblique patch arises a little above the dorsum, before the middle, and is clearly defined and dilated to the upper edge of the cell; cilia concolorous, preceded at the apex by a few bright coppery brown scales. Exp. al. 15 mm. Hindwings pale, shining, straw-grey, with a bronzy suffusion on their outer half; cilia brownish grey. Abdomen shining, pale fawn-ochreous. Legs pale fawn-ochreous, tarsi darker shaded, but with pale spots.

Type ♀ (26338) Mus. Wlsm.

HAB. MOLOKAI: 3000 ft., 6. IX. 1893. Unique.

**157.** (21) *Hyposmocoma progressa*, sp. nov. (Pl. XVIII. fig. 25).

Antennae pale ochreous, with black annulations. Palpi whitish ochreous, sprinkled externally with greyish fuscous. Head whitish ochreous. Thorax pale ochreous, shaded and mottled with greyish fuscous. Forewings pale ochreous, profusely sprinkled

and mottled with greyish fuscous; in the distribution of the dark shading a pattern is indicated, rather than expressed, consisting of an ill-defined basal patch bulging outward on the fold and above it, but receding to the margins; an oblique costal streak at one-fourth, with a nearly opposite dorsal streak below it; a costal shade a little beyond the middle, with an opposite dorsal shade; a patch or shade beyond the end of the cell, continued to the apex and overflowing the costal cilia, but leaving pale spots along the base of the cilia, these are reduplicated along the termen, to the number of about three in each series, being also traceable on the under side; the costal cilia are preceded by a somewhat distinct pale patch, which is matched on the dorsum opposite (the whole wing has a mottled appearance, and the indication of the markings depends entirely upon the amount of suffusion which may occur in different specimens); apical and dorsal cilia greyish fuscous, terminal cilia pale ochreous. Exp. al. 14 mm. Hindwings and cilia bronzy fuscous. Abdomen dark greyish fuscous. Legs greyish fuscous above, with paler tarsal spots.

Type ♀ (28503) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000 ft., v. 1896. Two specimens.

Closely allied to *blackburnii* Btl., (which also occurs in Maui), but exhibiting a very different general design of colouration.

**158.** (22) *Hyposmocoma domicolens*, Btl.

*Laverna domicolens* Btl., Ann. & Mag. NH. (5. s.) VII. 405—6, No. 48 (1881)<sup>1</sup>.

158<sup>a</sup>. (22<sup>a</sup>) *domicolens* Btl. + *domicolens* Btl. (Pl. XVIII. fig 26).

Antennae whitish ochreous, faintly annulate with brown, a large brownish fuscous spot on the basal joint. Palpi whitish ochreous, with a brownish fuscous shade along the basal half of the median joint externally, and a spot of the same colour before its apex; the extreme base of the terminal joint is also narrowly brownish fuscous. Head whitish ochreous. Thorax brownish fuscous, speckled with whitish ochreous; tegulae whitish ochreous, with a brownish fuscous spot at their base. Forewings whitish ochreous, with a dark umber-brown shade from the base extending along the dorsum and on the cell to beyond the middle of the wing, this is somewhat mottled with the pale ground-colour, but assumes a darker shade at the base of the dorsum, where there are a few brownish fuscous scales projecting along the fold, and in a pointed spot at the end of the cell (in some varieties the ground-colour is bone-white, the markings tending to split up into separate spots with a greater or less degree of suffusion on the wing-surface; the suffusion in some specimens being confined to the region above the fold, while in others the costal portion is quite free from it, the shading following the line of the fold and reaching to the apex after angulation downward to the tornus); two narrow elongate costal spots, one at the base, another at one-third, precede a slightly



sinuate transverse band of dark umber-brown at two-thirds the wing-length (this band is often more or less broken on the cell), the same colour appearing again in a series of marginal spots around the apex at the base of the whitish ochreous cilia through which they partly run. Exp. al. 14—18 mm. Hindwings pale grey, with a bronzy brownish tinge around the margins which overflows the brownish ochreous cilia, except at the extreme base, where they are nearly white; ♂ with a whitish ochreous subcostal hair-pencil. Abdomen bronzy brownish, varying to lustrous whitish. Legs whitish ochreous, tarsi spotted with fuscous.

Type ♂ (124: 81. 7) Mus. Br. [Caenotypes ♂ (25483); ♀ (25414); ♂ (25585); ♂ (25218); ♀ (25411) *Hawaii*, Mus. Wlsm.]

HAB. MOLOKAI: above 3000—above 4000 ft., 5. VI.—12. VII. 1893 (Perkins).—LANAI: 2000 ft., I.—II. 1894 (Perkins).—MAUI: Makawao, 2000 ft. (Blackburn)<sup>1</sup>.—HAWAII: Kona, 2000—3000 ft., VI. 1892, 3500 ft., 26.—29. VI. 1892, above 4000 ft., VII. 1892, 17. VIII.—8. IX. 1892, 2000—3000 ft., IX. 1892; Kaawaloa (Kona), 1500 ft., VI. 1892, above 2000 ft., IX. 1892; Mt. Kilauea, VII.—VIII. 1895 (Perkins). Forty-two specimens.

158<sup>b</sup>. (22<sup>b</sup>) *domicolens* Btl. + *suffusa*, var. nov. (Pl. XVIII. fig. 27).

This species is extremely variable and I must include with it yet another series in which the wings are entirely suffused with fawn-grey, the markings being almost, or quite, obliterated. Where these are traceable they agree precisely in position with those of the more typical form but no marginal spots are visible.

Type ♂ (27383); ♀ (27419) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) X. 1895.—HAWAII: Kona, about 3000 ft., (2) 29. VI. 1892; Mt. Kilauea, (6) VII. 1895. Nine specimens.

### 159. (23) *Hyposmocoma lupella*, sp. nov.

159<sup>a</sup>. (23<sup>a</sup>) *lupella*, sp. nov. + *lupella*, var. nov. (Pl. XVIII. fig. 28).

Antennae dark brown, annulate with pale ochreous; basal joint whitish ochreous, annulate with brown. Palpi whitish ochreous, the median joint shaded with brown on its basal half, the terminal joint sprinkled with brown scales. Head whitish ochreous, almost white. Thorax whitish ochreous; patagia and base of tegulae dark brown. Forewings whitish ochreous, with a broad dark brown shade from the base, extending with a sprinkling of the pale ground-colour along the costa to two-thirds, crossing the fold near the base, but not quite reaching the dorsum, and again before the middle almost reaching the dorsum, its outer edge very oblique and somewhat irregular; a narrow reduplicated brown patch before the tornus, extending through the cilia, and above it a small dark brown spot at the end of the cell; the apex of the wing is

sparsely suffused with brown scales, confluent in small costal spots and in an apical spot extending through the cilia; terminal cilia whitish ochreous. Exp. al. 13—17 mm. Hindwings grey; cilia with a brownish tinge; ♂ with a whitish ochreous subcostal hair-pencil. Abdomen brownish grey. Legs pale ochreous, with brownish grey tarsal spots.

Type ♂ (27872); ♀ (27641) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (10) IV. 1895; Mts., 3000—4000 ft., (1) V. 1894, (7) VI. 1894. Eighteen specimens.

159<sup>b</sup>. (23<sup>b</sup>) *lupella* Wlsm. + *suffusella*, var. nov. (Pl. XIX. fig. 1).

Forewings with the whole basal two-thirds suffused with brown, with the exception of a narrow space along the limbus and a more or less distinct whitish costal triangle. Exp. al. 12—16 mm. Palpi tending to be suffused with brown; median joint with a short pale band at its apex.

Type ♂ (26202); ♀ (26137) *Molokai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (3) IV. 1895; Mts., 3000—4000 ft., (2) VI. 1894.—OAHU: Waianae Mts., 2000—3000 ft., (3) IV. 1892.—MOLOKAI: above 3000 ft., (3) 5.—13. VI. 1893.—MAUI: Haleakala, 5000 ft., (3) III. 1894. Fourteen specimens.

159<sup>c</sup>. (23<sup>c</sup>) *lupella* Wlsm. + *candidella*, var. nov. (Pl. XIX. fig. 2).

Forewings with the ground-colour clearer white, which colour is usually displayed in a costal patch near the base, but in some few specimens this is almost entirely over-spread by the darker shade which also reaches the dorsum as far as the middle, leaving the limbus narrowly white. Exp. al. 12—16 mm. Palpi usually coloured only at the base of the median joint and not beyond the middle.

Type ♂ (25773); ♀ (25385) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (3) VI. 1894.—MOLOKAI: above 3000 ft., (3) 30. V.—12. VI. 1893.—LANAI: 2000 ft., (1) VII. 1894.—MAUI: Haleakala, below 4000—5000 ft., (2) V. 1896.—HAWAII: Halemanu, 4000 ft., (1) V. 1896; Mt. Kilauea, (2) VI.—VII. 1895; Kona, 5000 ft., (1) 30. VI. 1892, above 4000—5000 ft., (4) 4. VII. 1892, 4000 ft., (3) VII. 1892, above 4000 ft., (1) VIII. 1892, 4000 ft., (1) 9. IX. 1892, (4) IX. 1892; Hualalai (Kona), 5000 ft., (3) 5. VIII. 1892. Twenty-nine specimens.

It is noticeable that the variety *lupella*, having the white of the outer portion of the wing continued along the dorsum to the base, is confined to Kauai, where it is somewhat exceptional to meet with the varieties having the dark shade reaching to the dorsum.

In the variety *suffusella* the darker colour tends to suffuse the palpi as well as the forewings, while in *candidella* the white predominates on the palpi and on the wings.

**160.** (24) *Hyposmocoma mediella*, sp. nov. (Pl. XIX. fig. 3).

Antennae cream-colour, barred above with dark brown. Palpi slender, evenly recurved; whitish, shaded with fuscous at the base. Head and Thorax whitish. Forewings pale, glossy, cream-ochreous, with a dark bronzy brown spot at the base of the costa, partially connected with a broad median streak of the same colour commencing near the base, dilated outward and diffused obliquely upward toward the costa from a little beyond the middle; beyond the end of the cell are two bronzy brown spots, forming an equilateral triangle with another at the tornus; cilia whitish ochreous. Exp. al. 11—12 mm. Hindwings and cilia greyish brown; ♂ with a greyish subcostal hair-pencil. Abdomen greyish brown. Legs whitish ochreous, banded with greyish brown shading.

Type ♀ (25067); ♂ (25069) Mus. Wlsm.

HAB. OAHU: Waianae Mts., IV. 1892. Six specimens.

**161.** (25) *Hyposmocoma sabulella*, sp. nov. (Pl. XIX. fig. 4).

Antennae pale sandy ochraceous, barred above with fawn-brown, the basal joint shaded above and beneath with brownish fuscous. Palpi pale ochreous, the median joint shaded externally along the basal half and spotted near its outer end with brownish fuscous; the terminal joint with a brownish fuscous ring at the base. Head and Thorax whitish ochreous; tegulae dark fawn-brown. Forewings sandy ochraceous, with a dark fawn-brown shade commencing at the base of the costa, spreading nearly to the dorsum, and extending outward along the fold, but not along the costa, and suffusing the outer half of the cell to its abrupt termination at the discoidal vein where it reaches both margins; cilia pale sandy ochraceous. Exp. al. 15 mm. Hindwings shining, pale yellowish grey; cilia sandy ochraceous; ♂ with ochreous subcostal hair-pencil. Abdomen brownish. Legs sandy ochraceous.

Type ♀ (27566); ♂ (27567) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., V. 1895. Four specimens.

**162.** (26) *Hyposmocoma albifrontella*, sp. nov. (Pl. XIX. fig. 5).

Antennae pale brownish ochreous, the basal joint blackish. Palpi white, with a black streak at the base and a black spot at the apex of the median joint externally, also a black ring before the apex of the terminal joint. Head and Thorax snow-white. Forewings very pale brownish ochreous, with a dark brown streak from the base extending to two-thirds along the dorsum, covering the subplical space and crossing the fold near its base, but not at its outer extremity, above which is a brown costal spot preceded by a smaller one half-way between it and the base, and a faint indication of brown

scale-groups about the end of the cell; cilia pale brownish ochreous. Exp. al. 14 mm. Hindwings shining, pale grey; cilia pale cinereous, with a slight ochreous tinge; ♂ without subcostal hair-pencil. Abdomen pale cinereous, with a slight ochreous tinge. Legs whitish cinereous, tarsi broadly banded with dark brown.

Type ♂ (26229) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., vi. 1893. Unique.

**163.** (27) *Hyposmocoma humerovittella*, sp. nov. (Pl. XIX. fig. 6).

Antennae pale brownish ochreous, the basal joint fuscous. Palpi whitish ochreous, with a fuscous patch on the basal half of the median joint externally and a spot near the end of the joint; the terminal joint marked with fuscous at the base and apex. Head and Thorax whitish ochreous, the base of the tegulae fuscous. Forewings whitish ochreous, shaded with fawn-brown along the middle of the dorsum; a broad dark brownish fuscous streak extends from the base along the costa to the middle, and is followed by a small costal spot of the same at two-thirds from the base; opposite to this is a dorsal spot about the tornus, preceded by two smaller ones, one at the outer third of the fold, the other above and beyond it on the disc; a few fuscous marginal scales, at and below the apex, before the base of the whitish ochreous cilia, which are shaded through their middle and at the tornus with fawn-grey. Exp. al. 15 mm. Hindwings and cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey above, whitish ochreous at the sides. Legs whitish ochreous, the tarsi broadly banded with brownish grey.

Type ♂ (25088) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft., iv. 1892, "beaten from dead branches." Unique.

**164.** (28) *Hyposmocoma cincta*, sp. nov.

164<sup>a</sup>. (28<sup>a</sup>) *cincta*, sp. nov. + *cincta*, var. nov. (Pl. XIX. fig. 7).

Antennae whitish ochreous, barred above with umber-brown, basal joint umber-brown above nearly to its apex. Palpi whitish ochreous, the median joint shaded externally with umber-brown. Head and Thorax whitish ochreous, the base of the tegulae brown. Forewings whitish ochreous, the costa and dorsum suffused throughout with umber-brown which overflows the outer half of the wing; cilia whitish ochreous. Exp. al. 14 mm. Hindwings shining, steel-grey; cilia grey. Abdomen dark grey. Legs whitish ochreous, shaded with grey above.

Type ♀ (27555) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Unique.

164<sup>b</sup>. (28<sup>b</sup>) *cincta* Wlsm. + *adjacens*, var. nov. (Pl. XIX. fig. 8).

A cloudy, more ochreous variety, may possibly prove to be distinct. Exp. al. 14 mm.

Type ♀ (27335) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

**165.** (29) *Hyposmocomma mediospurcata*, sp. nov. (Pl. XIX. fig. 9).

Antennae whitish ochreous, barred above with dark brown. Palpi whitish ochreous, shaded at the base and near the apex of the median joint, also near the base of the terminal joint with dark brown. Head whitish ochreous. Thorax dark brown, mixed with ochreous, the tegulae ochreous. Forewings whitish ochreous, with a dark brown streak running from the base of the costa along the line of the cell to the apex; two elongate patches of the same colour, one before and one beyond the middle, the latter diffused downward to the central streak; along the dorsum, below the fold, is a sprinkling of dark brown scales ending in a thicker patch at the end of the fold; cilia whitish ochreous. Exp. al. 13—15 mm. Hindwings rather pale brownish grey; cilia pale brownish ochreous; ♂ with a whitish ochreous subcostal hair-pencil. Abdomen dark greyish; whitish ochreous beneath. Legs whitish ochreous, the tarsi broadly banded with dark brown.

Type ♂ (28108); ♀ (28107) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (1) VII. 1892; 3000 ft., (1) IX. 1892; Mt. Kilauea, (3) VII. 1895, (2) VIII. 1896; Hilo, 2000 ft., (1) XII. 1895. Eight specimens.

**166.** (30) *Hyposmocomma tripartita*, sp. nov. (Pl. XIX. fig. 10).

Antennae white, annulate with light brown; basal joint light brown, with a white annulus at the apex. Palpi white, median joint shaded with brown externally, the terminal joint sprinkled with brown and shaded before the apex. Head and Thorax fawn-brown above, with a white streak on either side continued backward along the upper edge of the tegulae; face white. Forewings with the costa and dorsum broadly rich fawn-brown, a white band of the same width along the middle, touching the costa at its extreme base, and separated from the cilia by a slender brown line; the white has a tendency to encroach upon the dorsal band in two inwardly oblique tooth-like projections beyond the middle, not clearly defined; cilia white, tinged with brown at and above the apex and at the tornus, terminal cilia with a broken brownish line along their middle. Exp. al. 14—15 mm. Hindwings and cilia rather shining, grey; ♂ with pale grey subcostal hair-pencil. Abdomen whitish, tinged with grey at the base above. Legs whitish, tibiae with greyish hairs above, the tarsi ringed with grey shading.

Type ♂ (26090) Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., VI. 1893; 4500 ft., 17. IX. 1893; forest above Pelekunu, 21. IX. 1893. Three specimens.

**167.** (31) *Hyposmocomma thoracella*, sp. nov. (Pl. XIX. fig. 11).

Antennae whitish, broadly barred above with brown. Palpi whitish, the median joint smeared and spotted near the apex externally with bronzy brown, the terminal joint with a spot of the same at its base. Head white. Thorax white, margined with bronzy brown at the sides. Forewings bronzy brown, with a broad white streak from the middle of the base to the end of the cell, diffused thence upward to the costa and outward to the apex, where it is sprinkled with bronzy brown; a slight projection from the brown dorsal area encroaches on the white median streak at the commencement of the outer third of the fold; cilia greyish, obscurely streaked with bronzy brown. Exp. al. 13 mm. Hindwings and cilia pale brownish grey; subcostal hair-pencil in the ♂ pale grey. Abdomen brownish grey. Legs greyish, tarsi faintly annulate.

Type ♂ (26459); ♀ (26457) Mus. Wlsm.

HAB. LANAI: 2000 ft. and above, I.—II. 1894. Three specimens.

This species differs from *H. tripartita* in the white head and thorax, and in the darker hue of the brown marginal colouring of the forewings.

**168.** (32) *Hyposmocomma limata*, sp. nov. (Pl. XIX. fig. 12).

Antennae greyish brown, basal joint white beneath. Palpi white, with a brown streak at the base of the median joint externally. Head and Thorax silvery white, the base of the tegulae bronzy brown. Forewings silvery white, with a broad bronzy brown band along the costa from base to apex and an elongate dorsal patch of the same colour before the tornus; cilia silvery, with a slight golden gloss. Exp. al. 15 mm. Hindwings dark brownish grey; cilia grey; ♂ without subcostal hair-pencil. Abdomen brownish fuscous. Legs whitish, the hairy hind tibiae grey above, the tarsi shaded with grey externally.

Type ♂ (27486) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895. Unique.

**169.** (33) *Hyposmocomma sublimata*, sp. nov. (Pl. XIX. fig. 13).

Antennae brownish fuscous. Palpi shining, creamy whitish, terminal joint and outer side of median shaded with fuscous. Head brownish fuscous; face creamy white. Thorax brownish fuscous; tegulae cream-white. Forewings cream-white along the middle, with a broad brownish fuscous costal shade extending from the base to the

apex, this is attenuated at the extreme base of the costa; a corresponding dorsal shade, extending from the base to the tornus, is diluted upward along the termen, thus connected with the costal shade by only a few scattered scales; at the lower edge of the costal shade, a little before the wing-middle, a small darker spot is faintly indicated, and this is followed by a conspicuous blackish spot at the end of the cell, connected at its upper edge with the costal shade; cilia pale brownish fuscous. Exp. al. 14 mm. Hindwings shining, grey; cilia dull brownish grey. Abdomen slaty grey. Legs brownish grey, with pale tarsal spots.

Type ♀ (28366) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

170. (34) *Hyposmocoma advena*, sp. nov. (Pl. XIX. fig. 14).

Antennae bronzy brown. Palpi pale ochreous, shaded externally with bronzy brown at the extreme base and along the terminal joint. Head pale ochreous, a few bronzy brown scales on the crown. Thorax bronzy brown, tegulae pale ochreous. Forewings bronzy brown, with a broad pale ochreous streak from the base to three-fourths, including the fold, except at its outer end, and leaving the dark colour wider on the costal than on the dorsal margin; beyond it a semi-detached pale ochreous streak runs to the termen and includes the terminal cilia; cilia bronzy brownish. Exp. al. 12 mm. Hindwings brownish grey; cilia bronzy brownish. Abdomen brownish fuscous. Legs brownish fuscous, tarsi spotted with pale ochreous, spurs pale ochreous.

Type ♀ (26091) Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., VI. 1893. Unique.

The broad ochreous streak sufficiently distinguishes this from all other species in the group except *subflavidella* ♀. The specimen is unfortunately unique, but the shape of the median streak, its abrupt termination above the tornus without diminution of its width, and the consequently narrower costal area overspread by the dark ground-colour, gives it a very different appearance. One would expect this species to be sexually dimorphic as is the case with *subflavidella*, and should a series of specimens be obtained from Molokai it will probably exhibit an illustration of close parallelism rather than of special identity.

171. (35) *Hyposmocoma subflavidella*, sp. nov. (Pl. XIX. fig. 15).

Antennae fuscous. Palpi ochreous, tipped with fuscous and smeared with fuscous externally. Head, ♂ bright yellowish ochreous: ♀ whitish ochreous. Thorax, ♂ bright yellowish ochreous, with a smoky fuscous median patch, the base of the tegulae smoky fuscous: ♀ purplish fuscous, the tegulae tipped with whitish ochreous, but exceptionally these are suffused with the darker colour. Forewings, ♂ pale straw-ochreous, blending

to bright yellowish ochreous on the terminal area and on the apical and terminal cilia ; with a broad smoky fuscous band along the costa from base to apex, fully one-third the wing-width ; costal cilia smoky fuscous, mixed with ochreous, tornal cilia fuscous ; under side dark fuscous, cilia as above : ♀ purplish fuscous, with a single, rather broad whitish ochreous streak along the fold, abruptly terminated before the tornus ; the costa very narrowly tinged with whitish ochreous beyond the basal third ; terminal cilia bright ochreous, at the extreme apex and about the tornus tawny grey (in some varieties the pale plical streak is obliterated by a suffusion of the darker colour). Exp. al. 11—14 mm. Hindwings fuscous ; cilia tawny fuscous ; ♂ without subcostal hair-pencil. Abdomen dark fuscous. Legs greyish.

Type ♂ (28241) ; ♀ (26595) Mus. Wlsm.

HAB. MAUI : Haleakala, 5000 ft., (7) III. 1894, (2) IV. 1894, (17) v. 1896 ; Olinda (Haleakala), 4000 ft., (2) IV. 1894. Twenty-eight specimens.

**172.** (36) *Hyposmocoma auroargentea*, sp. nov. (Pl. XIX. fig. 16).

Antennae whitish, much shaded with mouse-grey above. Palpi whitish, terminal joint mouse-grey. Head silvery whitish. Thorax silvery, with some mouse-grey shading. Forewings shining, silvery white, with a mouse-grey shade from the base below the costa, extending beyond one-third ; a narrower mouse-grey shade along the outer half of the cell, ending in a spot at the end of the cell, and a narrow mouse-grey shade along the fold throughout its length ; cilia golden yellow, greyish about the tornus ; under side dark leaden grey, costal and terminal cilia ochreous, tornal cilia dark grey. Exp. al. 15—16 mm. Hindwings and cilia leaden grey ; ♂ without subcostal hair-pencil. Abdomen dark leaden grey. Legs greyish cinereous.

Type ♂ (28402) ; ♀ (28318) Mus. Wlsm.

HAB. MAUI : Haleakala, above 5000 ft., III. 1894 ; 5000 ft., v. 1896. Four specimens.

A variety of *Neelysia lignicolor* may easily be confused with this species, but can be at once separated by the absence of a vein in the forewings.

**173.** (37) *Hyposmocoma illuminata*, sp. nov. (Pl. XIX. fig. 17).

Antennae dark umber-brown. Palpi pale yellowish ochreous, with a dark brown streak externally on the basal half of the median joint ; terminal joint shaded beneath and tipped with dark brown. Head pale yellow-ochreous. Thorax bright orange-ochreous. Forewings, ♂ silvery white, with a narrow, diffused, dark umber-brown streak at the base of the costa, reaching to about one-third along it ; this is margined at its lower edge by a dash of bright ochreous, the same colour extending also along the limbus ; costal, apical and terminal cilia bright orange-ochreous, tornal cilia brownish



grey; under side dark, shining, fuscous, cilia ochreous, brownish grey at the tornus: ♀ dull ochreous, more or less suffused with brownish scales, especially along the costal portion of the wing; cilia brownish grey, terminal cilia ochreous along their basal half. Exp. al. 13—14 mm. Hindwings dark tawny grey; cilia dark tawny grey, with a brownish tinge; ♂ with subcostal hair-pencil. Abdomen dark tawny brown. Legs, ♂ hind tibiae whitish cinereous, with long tawny hairs above; the tarsi faintly shaded with tawny grey: ♀ smoky brownish fuscous.

Type ♂ (28384); ♀ (28250) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (5) III. 1894, (3) IV. 1894, (6) V. 1896. Fourteen specimens.

**174.** (38) *Hyposmocoma auripennis*, Btl. (Pl. XIX. fig. 18).

*Gracilaria auripennis* Btl., Ann. & Mag. NH. (5. s.) VII. 404, No. 45 (1881)<sup>1</sup>.

Antennae, ♂ pale ochreous, faintly banded above with greyish fuscous, the basal joint streaked above and below with the same; ♀ banded with blackish, more distinctly than in the ♂. Palpi whitish, with a slight ochreous tinge. Head and Thorax rich yellow-ochreous; the face slightly paler, shining; the bases of the tegulae fuscous. Forewings and cilia rich yellow-ochreous, the colour slightly intensified on the costa towards the apex, on the termen and on the cilia; a small fuscous spot on the costa at the extreme base; under side shining, greyish fuscous, the costa narrowly ochreous, cilia bright ochreous. Exp. al. 13—17 mm. Hindwings and cilia tawny grey, costal cilia pale yellowish cinereous; ♂ without subcostal hair-pencil. Abdomen dark fuscous, anal tuft paler. Legs whitish ochreous, the upper sides of the tibiae greyish.

Type ♂ (121: 81. 7) Mus. Br. [Caenotype ♂ (28270); ♀ (28431) Mus. Wlsm.]

HAB. MAUI: Haleakala (Blackburn)<sup>1</sup>; Haleakala, 5000 ft., v. 1896 (Perkins); Olinda (Haleakala), 4000 ft., v. 1896 (Perkins). Thirteen specimens.

**175.** (39) *Hyposmocoma rhabdophora*, sp. nov. (Pl. XIX. fig. 19).

Antennae whitish ochreous, barred above with brownish fuscous, the basal joint fuscous above nearly to its apex. Palpi whitish ochreous, with a broad brownish fuscous streak along the outer side of the median joint, reaching to or beyond its middle, and followed by a patch of the same before its apex; the terminal joint also shaded with fuscous at its base externally. Head and Thorax pale yellow-ochreous; tegulae fuscous at their base. Forewings bright yellowish ochreous, with a strong brownish fuscous streak along the costa from base to two-fifths; cilia yellow-ochreous, tipped with grey about the tornus; under side pale, shining, greyish fuscous, cilia pale ochreous. Exp. al. 15 mm. Hindwings shining, brownish grey; cilia brownish grey, tinged with ochreous

around the extreme apex; ♂ without subcostal hair-pencil. Abdomen dark brownish grey, anal segment ochreous. Legs whitish cinereous.

Type ♀ (26328) Mus. Wlsm.

HAB. MOLOKAI: above 4000 ft., 17. IX. 1893. Unique.

A ♂ in poor condition (26097) taken in the same island at about 4000 ft., VI. 1893, appears to belong to an earlier brood of this species; the antennae are greyish brown, the palpi pale ochreous, scarcely shaded at the base externally. Exp. al. 10 mm.

The ornamentation of the palpi, the greater extension of the dark streak on the costa of the forewings, and their paler colouring, with less contrasted cilia and costa on the under side, will at once separate this species from *auripennis*, Btl.

**176.** (40) *Hyposmocoma costumaculata*, sp. nov. (Pl. XIX. fig. 20).

Antennae pale ochreous, annulate with black. Palpi whitish ochreous. Head very pale ochreous. Thorax yellow-ochreous. Forewings and cilia yellow-ochreous, a short black streak along the base of the costa; small plical and disco-terminal dots are indicated, also a discal, a little beyond the plical, and two costal, one before and one beyond the middle (in some specimens the spots are scarcely distinguishable). Exp. al. 10 mm. Hindwings and cilia grey; ♂ without subcostal hair-pencil. Abdomen dark grey above, whitish beneath. Legs whitish ochreous, tarsi conspicuously annulate with black.

Type ♂ (26207); ♀ (26179) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., (7) 30. V. 1893, (1) 16. IX. 1893. Eight specimens.

The single ♀ varies in having the antennae more distinctly annulate, but the spots on the wings are almost obliterated.

**177.** (41) *Hyposmocoma virgata*, sp. nov. (Pl. XIX. fig. 21).

Antennae pale ochreous, annulate with dark fuscous. Palpi pale ochreous. Head orange-ochreous, the face paler. Thorax orange-ochreous, with a fuscous median spot, the base of the tegulae fuscous. Forewings bright orange-ochreous, spotted with dark purplish fuscous; an elongate narrow patch at the base of the costa is depressed at its apex, nearly meeting, on the fold, a narrow streak of the same colour arising from the dorsum near the base; this is followed by a narrow costal spot at one-third, another costal spot occurring at two-thirds, being the upper one of a series of three running obliquely backward, the lower one lying on the dorsum scarcely before the middle; the apical and terminal portion of the wing is mottled with purplish fuscous, extending inward in the middle to the end of the cell; cilia dark purplish fuscous at the apex, orange-ochreous below it, and tawny grey towards the tornus. Exp. al. 12—14 mm.

Hindwings dark bronzy grey; cilia tawny grey; ♂ without subcostal hair-pencil. Abdomen dark tawny grey. Legs, hind tibiae and tarsi banded alternately with pale ochreous and tawny fuscous.

Type ♀ (26094); ♂ (26231) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., (5) 22. v.—vi. 1896.—MAUI: Haleakala, 5000 ft., (12) v. 1896. Seventeen specimens.

Somewhat variable in the intensity of the dark markings, the tendency being towards obliteration in the ♂.

**178.** (42) *Hyposmocoma bilineata*, sp. nov. (Pl. XIX. fig. 22).

Antennae pale ochreous, distinctly annulate with tawny fuscous. Palpi whitish ochreous, without markings. Head pale ochreous, face whitish ochreous. Thorax bright ochreous. Forewings bright orange-ochreous, with two distinct tawny fuscous streaks running through them; the first, commencing at the base of the costa, overflowing the costa itself for a short distance, thence slightly attenuated outward to the end of the cell and continued to the apex, but not through the terminal cilia; the second, beginning at the flexus, is continued along the dorsum to the tornus where it affects the colouring of the dorsal cilia; the other cilia are bright ochreous, fading to pale ochreous. Exp. al. 12 mm. Hindwings shining, tawny greyish; cilia dull tawny brownish grey; ♂ without subcostal hair-pencil. Abdomen dark tawny greyish fuscous; anal tuft, sides and under side shining silvery. Legs silvery whitish, with some greyish tarsal bands and a shade on the hairy upper side of the hind tibiae.

Type ♂ (25963); ♀ (25967) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 2000—3000 ft., iv. 1892. Ten specimens.

**179.** (43) *Hyposmocoma haleakalae*, Btl. (Pl. XIX. fig. 23).

*Chrysoclista* (?) *haleakalae* Btl., Ann. & Mag. NH. (5. s.) vii. 407, No. 51 (1881)<sup>1</sup>.

Antennae greyish fuscous. Palpi, median joint pale ochreous, externally shaded with fuscous, terminal joint greyish fuscous. Head ochreous, shaded with greyish fuscous, the face paler. Thorax greyish fuscous; tegulae pale ochreous, shaded with greyish fuscous on the margins. Forewings bright orange-ochreous, with a broad costal shade of tawny greyish fuscous extending to three-fourths, scarcely interrupted at the middle of the wing by a few ochreous scales; this shade is very dark at the base and is diluted and diffused outwardly, widening to the end of the cell and continued thence along the middle to the apex, leaving the margins of the bright ground-colour, with the exception of the costal cilia; a corresponding dorsal streak also starts from the base and is attenuated to the tornus, but of equal intensity throughout, a few scales at

its outer extremity also connect this with the end of the cell ; dorsal cilia tawny greyish fuscous, the other cilia, except on the costa about the apex, bright orange-ochreous. Exp. al. 15 mm. Hindwings dark greyish fuscous ; cilia tawny greyish fuscous ; ♂ without subcostal hair-pencil. Abdomen dark greyish fuscous. Legs fuscous.

Type ♀ (126: 81. 7) Mus. Br. [Caenotype ♂ (28428) Mus. Wlsm.]

HAB. MAUI: Haleakala, above 4000 ft. (Blackburn)<sup>1</sup>; 5000 ft., v. 1896 (Perkins).

**180.** (44) *Hyposmocoma lucifer*, sp. nov. (Pl. XIX. fig. 24).

Antennae bronzy brownish. Palpi, median joint ochreous, shaded with bronzy brown externally ; terminal joint scarcely as long as the median, bronzy brown, with an ochreous line along its inner side. Head greyish, with some ochreous scales at the side ; face grey. Thorax bronzy brown, with some whitish ochreous scales on the tegulae. Forewings bronzy brown, with a narrow pale ochreous costal streak, commencing near the base and running to beyond the middle, somewhat dilated at the middle ; a broad pale ochreous streak commences with the costal cilia and is attenuated along the costa to the apex ; another line of the same colour runs from the base along the fold and is continued, with a slight interruption at the end of the fold, along the base of the terminal cilia to below the apex ; cilia dark tawny cinereous. Exp. al. 16 mm. Hindwings dark brownish ; cilia dark tawny cinereous. Abdomen brownish fuscous. Legs cinereous.

Type ♀ (26064) Mus. Wlsm.

HAB. MOLOKAI: above 4000 ft., vi. 1893. Unique.

Closely allied to *haleakalae* Btl., the ♂ is at present unknown.

**181.** (45) *Hyposmocoma evanescens*, sp. nov. (Pl. XIX. fig. 25).

Antennae dark brownish grey. Palpi brownish grey, darker externally, a pale ring at the apex of the median joint. Head shining, pale brassy grey, face slightly paler. Thorax brassy grey. Forewings brassy grey, with a brownish fuscous suffusion along the base of the costa and along the line of the discal cell, whence it is dilated outward and somewhat darkened to the apex and termen ; cilia brassy grey, smoky fuscous about the tornus. Exp. al. 13—14 mm. Hindwings dark bronzy fuscous ; cilia smoky fuscous ; ♂ without subcostal hair-pencil. Abdomen fuscous. Legs fuscous, with paler tarsal spots.

Type ♂ (28378) ; ♀ (26642) Mus. Wlsm.

HAB. MAUI: Haleakala, above 5000 ft., (1) III. 1894, 5000 ft., (4) v. 1896. Five specimens.

The markings on the forewings are so slight and so much blended with the general ground-colour as to be scarcely traceable in any recognisable pattern, or even distinguishable, except by carefully changing the angle of incidence, when looking at them in a good light. This species could be compared with *straminella* and *impunctata*, but is at once separated by the absence of the subcostal hair-pencil.

**182.** (46) *Hyposmocoma ferricolor*, sp. nov. (Pl. XIX. fig. 26).

Antennae pale cinereous, annulate with pale brownish fuscous. Palpi pale brownish ochreous, with a fuscous ring near the end of the median joint; terminal joint shaded with fuscous. Head and Thorax brownish fuscous, mixed with brownish ochreous scales; face brownish ochreous. Forewings ferruginous brown, shaded with brownish fuscous, especially along the costa, to three-fourths, a patch near the end of the cell and in the fold below it, rather more distinctly ferruginous, with a small spot of the same at the end of the cell; this slight change of colour appears to be an indication of the plical and two discal spots which are not otherwise recognisable; cilia brownish ferruginous, shading to greyish fuscous about the tornus. Exp. al. 16 mm. Hindwings and cilia dark greyish, the latter with a tawny tinge. Abdomen greyish fuscous. Legs pale greyish fuscous.

Type ♀ (25850) Mus. Wlsm.

Hab. HAWAII: Hualalai (Kona), 5000 ft., 5. VIII. 1892. Unique.

It is within the bounds of possibility that this may be a mere variety of *domicolens* Btl., but it is the only specimen exhibiting this particular shade of colour and there is no sufficient indication of the direction of the markings to justify its inclusion in the series.

**183.** (47) *Hyposmocoma impunctata*, sp. nov. (Pl. XIX. fig. 27).

Antennae pale fawn, with fawn-brown annulations. Palpi pale fawn. Head and Thorax pale fawn, the latter shaded along the middle with fawn-brown. Forewings pale fawn, sprinkled with fawn-brown, with a darker shade of the same, tending to brownish fuscous, commencing at the base of the costa, where it is diffused outwardly and following the cell, whence it extends to the apex, terminating in a dark spot on the basal half of the apical cilia; similar spots are indicated above and beneath it on the costa and termen; thus the main feature of the pattern consists of a dark streak running through a pale wing, but the sprinkling of dark scales, almost amounting to suffusion, terminates somewhat abruptly about the end of the cell, suggesting a costal and dorsal pale patch similar to that which occurs in other species, especially in many forms of *blackburnii* Btl., but there is no indication of a basal patch, a character which would

place it in the group of *straminella*. Exp. al. 15 mm. Hindwings grey; cilia brownish grey; ♂ with pale ochreous subcostal hair-pencil. Abdomen slaty grey. Legs pale fawn, with greyish tarsal bands.

Type ♂ (27496) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895. Unique.

This species differs from *blackburnii* Btl., in the absence of all indication of the discal spots.

**184.** (48) *Hyposmocoma straminella*, sp. nov. (Pl. XIX. fig. 28).

Antennae shining, straw-white, with a greyish brown spot on the basal joint, and very faint bands of the same on the basal half of the stem above. Palpi, terminal joint shorter than median; straw-white, with a greyish brown ring near the end of the median joint. Head greyish brown; face white. Thorax greyish brown; tegulae straw-white. Forewings shining, straw-white, with a greyish brown shade from the base along the discal cell, somewhat dilated beyond it and passing through the cilia at and above the apex; cilia straw-whitish, shaded with brown, especially about the tornus. Exp. al. 13—15 mm. Hindwings brownish grey; cilia greyish brown; ♂ with a stramineous subcostal hair-pencil. Abdomen brownish grey. Legs greyish, tarsi shining, whitish.

Type ♀ (25409); ♂ (25528) Mus. Wlsm.

HAB. HAWAII: Kona, 3500—4000 ft., 26. VI.—20. VII. 1892, (1) 10. VIII. 1892. Twelve specimens.

**185.** (49) *Hyposmocoma metallica*, sp. nov. (Pl. XX. fig. 1).

Antennae shining, bronzy fuscous. Palpi brassy, rust-brownish on their outer sides. Head rich rust-brown above, with a strong purplish sheen between the antennae; face brassy ochreous. Thorax cupreous. Forewings bronzy cupreous, the dorsal half paler than the costal, the tints blending, but not defined; cilia cupreous. Exp. al. 12—13 mm. Hindwings and cilia bronzy purplish fuscous; ♂ without subcostal hair-pencil. Abdomen blackish (probably purplish when fresh). Legs cupreous, tarsi brassy ochreous.

Type ♂ (25753); ♀ (27438) Mus. Wlsm.

HAB. HAWAII: Kona, 5000 to above 6000 ft., (4) 30. VI.—30. VIII. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892; Mt. Kilauea, (1) VII. 1895. Six specimens.

A bright, metallic, and distinct species.

**186.** (50) *Hyposmocomma continuella*, sp. nov. (Pl. XX. fig. 2).

Antennae fuscous. Palpi whitish, the terminal joint shaded with fuscous. Head whitish, with a slight ochreous tinge. Thorax tawny fuscous, the tegulae tipped with whitish. Forewings tawny fuscous, with a broad whitish streak along the fold, from the middle of the base to the tornus, and thence continued along the base of the terminal cilia, where it assumes a yellowish tint, to the apex; along the middle the costa is very narrowly whitish; cilia brownish cinereous. Exp. al. 12 mm. Hindwings and cilia brownish cinereous. Abdomen fuscous. Legs pale cinereous.

Type ♀ (26623) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., iv. 1894. Unique.

This species may be distinguished from *indicella* by its paler head and general colouration, and by the median line not being interrupted above the tornus.

**187.** (51) *Hyposmocomma indicella*, sp. nov. (Pl. XX. fig. 3).

Antennae fuscous. Palpi whitish, with a dark line along their under side, terminal joint fuscous. Head greyish fuscous, an ochreous lateral line above each eye. Thorax greyish fuscous, with some whitish lines on the tegulae. Forewings dark tawny, with a strong yellowish white streak from the middle of the base along the fold, abruptly terminated above the tornus; this is followed by a short yellowish white streak along the middle of the termen at the base of the greyish fuscous cilia. Exp. al. 10—11 mm. Hindwings fuscous; cilia dark greyish fuscous; ♂ without subcostal hair-pencil. Abdomen dark fuscous. Legs pale cinereous, the tarsi shaded above with greyish fuscous.

Type ♂ (26639); ♀ (28300) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft. and above, (3) III. 1894, (1) v. 1896. Four specimens.

The dark head, with distinct lateral lines on the head and tegulae, and the abrupt termination of the median line on the forewings distinguish this species from *continuella*.

**188.** (52) *Hyposmocomma patriciella*, sp. nov. (Pl. XX. fig. 4).

Antennae smoky black. Palpi whitish cinereous, sprinkled with smoky black, especially on their outer sides. Head brassy grey. Thorax blackish, tegulae touched with white scales. Forewings dark tawny fuscous (almost blackish), a diffused line of white scaling along the fold, somewhat dilated before the tornus, with a few scattered scales beneath the costa and a small group of the same at the costal cilia; cilia dark

tawny fuscous; under side purple. Exp. al. 12 mm. Hindwings very dark purple; cilia tawny fuscous; under side purplish fuscous; ♂ without subcostal hair-pencil. Abdomen blackish. Legs dark tawny fuscous, tarsi with two or three whitish spots.

Type ♂ (28306) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

The dark purple hindwings and the absence of the subcostal hair-pencil on the hindwings, as well as of the mealy patch on the under side of the forewings, separate this species from *butalidella* Wlsm., which it otherwise resembles. It is larger than *indicella* Wlsm., from which it differs also in its purple hindwings and in the absence of whitish ochreous scales at the base of the terminal cilia.

**189.** (53) *Hyposmocoma butalidella*, sp. nov. (Pl. XX. fig. 5).

Antennae fuscous. Palpi, terminal joint as long as median; fuscous externally, whitish on their inner sides. Head and Thorax brownish fuscous. Forewings brownish fuscous, almost black, with a slightly diffused white streak along the fold from the middle of the base; a white anteapical transverse fascia is diffused outward at its middle, and is sometimes preceded by some white subcostal scales; cilia greyish fuscous; on the under side, from near the base to the end of the cell, is a pale, almost whitish, mealy-looking patch, not reaching the costa but diffused downward toward the dorsum in the ♂. Exp. al. 12—14 mm. Hindwings pale greyish fuscous; cilia greyish fuscous; ♂ with an expansible blackish subcostal hair-pencil. Abdomen and Legs dark fuscous, the anal tuft and under side of the tarsi cinereous.

Type ♂ (26530); ♀ (28290) Mus. Wlsm.

HAB. MAUI: Haleakala, 7000 ft., iv. 1894, about 6000 ft., v. 1896. Two specimens.

The single ♀ loses the white markings, exhibiting only a few scales about the position of the costal spot.

**190.** (54) *Hyposmocoma unistriata*, sp. nov. (Pl. XX. fig. 6).

Antennae cinereous, basal joint brownish. Palpi dirty whitish on their inner sides, shaded with brownish fuscous externally, except at the apex of the median joint. Head white. Thorax tawny fuscous, with white lateral streaks. Forewings tawny fuscous, with a broad white streak commencing at the base of the costa and following the fold nearly to its outer extremity, where there is a small round white dorsal spot, a larger white costal spot lying above and a little beyond it, with a narrow elongate white spot preceding it on the middle of the costa; cilia tawny fuscous, with a slight greyish tinge; under side brownish grey, with a faint indication of the two costal spots on the



extreme margin. Exp. al. 13—14 mm. Hindwings dark brownish grey; cilia tawny grey; ♂ without subcostal hair-pencil. Abdomen and Legs brownish grey.

Type ♂ (26382); ♀ (26153) Mus. Wlsm.

HAB. MOLOKAI: 4000 ft. and upwards, (2) VI. 1893; forest above Pelekunu, (2) 29. VIII. 1893; 4500 ft., (1) 11. IX. 1893. Five specimens.

The white markings are sometimes tinged with ochreous. This species differs from *lineata* in its browner colour, in the greater breadth of the white markings, the spots touching the costa, in the longer plical streak and in the white head.

**191.** (55) *Hyposmocoma ludificata*, sp. nov. (Pl. XX. fig. 7).

Antennae dark fuscous. Palpi dark fuscous, paler on their inner side, with a minute white speck at the end of the median joint. Head dark bronzy fuscous. Thorax dark tawny fuscous, a whitish streak at the edge of the tegulae. Forewings dark tawny fuscous, almost black, with a clear, shining, white plical streak from the base to beyond the middle, a white costal spot above its outer extremity, and two marginal spots beyond it, the costal round, the tornal suberect and slightly oblique; an indication of whitish scales occurs at the apex in the dark tawny greyish cilia. Exp. al. 14—16 mm. Hindwings and cilia dark tawny grey; ♂ with an ochreous subcostal hair-pencil. Abdomen dark greyish fuscous. Legs dark tawny grey, spurs whitish beneath.

Type ♂ (28381); ♀ (28304) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896; Olinda (Haleakala), 4000 ft., (1) v. 1896. Ten specimens.

Only distinguishable from *lineata* Wlsm., by the subcostal hair-pencil of the ♂, by its slightly larger size and rather broader white markings, and by the white cilia at the apex of the forewings.

**192.** (56) *Hyposmocoma lineata*, sp. nov. (Pl. XX. fig. 8).

Antennae fuscous. Palpi fuscous, the median joint whitish on the inner side and sprinkled with whitish externally at the base. Head brownish fuscous. Thorax dark tawny fuscous, with a slender whitish line along each side. Forewings and cilia dark tawny fuscous, a slender white line along the fold from the base to half the wing-length; above its outer extremity is a white subcostal spot, followed by a smaller one near the commencement of the costal cilia, with a similar one opposite to it, adjacent to the dorsum before the tornus; under side brownish fuscous, unspotted. Exp. al. 13 mm. Hindwings brownish fuscous; cilia dark tawny fuscous; ♂ without subcostal hair-pencil. Abdomen dark fuscous. Legs brownish fuscous.

Type ♀ (26568); ♂ (28266) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III.—IV. 1894, v. 1896. Six specimens.

Extremely similar to *ludificata* Wlsm., the markings are, however, more slender. The absence of the subcostal hair-pencil and of the white spot in the cilia at the apex of the forewings enables this species to be distinguished.

**193.** (57) *Hyposmocoma propinqua*, sp. nov. (Pl. XX. fig. 9).

Antennae fuscous. Palpi, terminal joint shorter than the median; median joint whitish on the inner side, smeared with fuscous externally. Head and Thorax fuscous. Forewings fuscous, with a slight tawny tinge, a white basal streak runs from the middle along the upper edge of the fold to half its length, a conspicuous white spot lying on the fold above the tornus, preceded by a dark fuscous spot in the fold touching its inner edge; beyond and above this is a small white costal spot a little before the apex; cilia fuscous, tipped with white at the extreme apex. Exp. al. 10 mm. Hindwings brownish fuscous; cilia fuscous; ♂ with an expansible fuscous subcostal hair-pencil. Abdomen dark fuscous; anal claspers of the ♂ very strongly developed, each with three long curved points projecting inward. Legs fuscous, with two white tarsal dots.

Type ♂ (26152) Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., VI. 1893. Unique.

This species appears to be closely allied to *admirationis*, differing in the absence of the transverse fascia and in the dark head.

**194.** (58) *Hyposmocoma admirationis*, sp. nov. (Pl. XX. fig. 10).

Antennae cinereous. Palpi, terminal joint shorter than the median; median joint purplish grey, terminal joint whitish. Head white; face grey. Thorax brownish fuscous, with a white line along the middle of the tegulae. Forewings brownish fuscous, with a strong snow-white streak from the middle of the base above the fold, abruptly terminated before the middle of the wing and followed by a large snow-white spot, narrowly separated from the dorsum before the tornus; on the costa between these is a minute white streaklet; a white fascia crosses the wing before the apex, attenuated and outwardly angulated at its middle; the tips of the apical cilia are white, shaded along their base and about the tornus with brownish fuscous. Exp. al. 9—10 mm. Hindwings and cilia brownish fuscous; ♂ with an expansible greyish subcostal hair-pencil. Legs brownish fuscous, with a white spot at each extremity of the tibiae and two white dots on the tarsi.

Type ♂ (26331) Mus. Wlsm.

HAB. MOLOKAI: above 3000—4000 ft., 24. VI.—12. VII. 1893, (1) 16. IX. 1893. Four specimens.

**195.** (59) *Hyposmocomma quadristriata*, sp. nov. (Pl. XX. fig. 11).

Antennae dark fuscous. Palpi, terminal joint shorter than the median; dark fuscous, paler on their inner sides. Head and face cinereous, blending to brownish fuscous posteriorly. Thorax bronzy fuscous, the tegulae streaked with ochreous. Forewings bronzy fuscous, with four distinct pale ochreous streaks, or elongate patches, the longest commencing at the middle of the base extends to the middle of the fold, a shorter patch of the same colour lying on the cell above its outer extremity; the plical streak is followed by a second, shorter plical streak, not reaching the dorsum, and the discal patch is also followed by a second, rather longer discal patch, extending to the end of the cell, beyond which is a small lunate spot of the same colour; a line of pale ochreous scales runs along the base of the tawny fuscous terminal cilia. Exp. al. 11 mm. Hindwings and cilia tawny fuscous; ♂ without subcostal hair-pencil. Abdomen fuscous. Legs tawny fuscous.

Type ♂ (26355) Mus. Wlsm.

HAB. MOLOKAI: about 4500 ft., 23. IX. 1893. Unique.

**196.** (60) *Hyposmocomma numida*, sp. nov. (Pl. XX. fig. 12).

Antennae black, the basal joint with a white spot at its apex. Palpi black, a white spot at the apex of the median joint and two small white spots on the terminal joint. Head black; face yellowish white. Thorax glossy, shining, black. Forewings glossy, shining, black, with snow-white specks; three on the costa, the first, very small near the base, the second in the middle, and the third at the commencement of the costal cilia; on the tornus opposite the last costal is a similar spot, and a few minute scale-specks are scattered about the disc and fold, but these are by no means so conspicuous as those on the margins; cilia smoky brown. Exp. al. 11 mm. Hindwings and cilia dark smoky brown; ♂ without subcostal hair-pencil. Abdomen black. Legs smoky brown, with whitish tarsal spots.

Type ♂ (28477) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000 ft., v. 1896. Unique.

A very distinct species.

**197.** (61) *Hyposmocomma nigrescens*, sp. nov. (Pl. XX. fig. 13).

Antennae smoky black. Palpi cinereous, externally blackish. Head cinereous, blackish at the sides. Thorax tawny black. Forewings tawny black, with a few scattered pale ochreous scales, scarcely visible except in a few irregularly scattered spots around the termen and apex, the first of this broken series being in the costal cilia; cilia

smoky blackish. Exp. al. 10—11 mm. Hindwings dark tawny fuscous; cilia blackish, with a slight purplish tinge; ♂ without subcostal hair-pencil. Abdomen black. Legs smoky fuscous.

Type ♂ (27395) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895, VIII. 1896. Three specimens.

In another specimen, ♂ (27505), which I take to belong to the same species, the pale scales are rather white than ochreous, and some of these are grouped near the base, especially on the fold.

**198.** (62) *Hyposmocoma fuscopurpurea*, sp. nov. (Pl. XX. fig. 14).

Antennae and Palpi purplish fuscous. Head bronzy. Thorax, Forewings and cilia unicolorous dark purplish fuscous. Exp. al. 10—12 mm. Hindwings tawny purplish; cilia dark purplish grey; ♂ without subcostal hair-pencil. Abdomen dark purple. Legs purplish grey.

Type ♂ (26592); ♀ (26594) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (4) III.—IV. 1894, (3) v. 1896; Olinda (Haleakala), 4000 ft., (3) IV. 1894, (2) v. 1896. Twelve specimens.

**199.** (63) *Hyposmocoma niger*, sp. nov. (Pl. XX. fig. 15).

Antennae smoky black, the basal joint cinereous beneath. Palpi cinereous, blackish on their outer sides. Head shining, black; face brownish cinereous. Thorax bronzy black. Forewings unicolorous bronzy black; cilia with a slight brownish tinge. Exp. al. 10 mm. Hindwings and cilia tawny brownish black; ♂ without subcostal hair-pencil. Abdomen and Legs black.

Type ♂ (26099) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., VI. 1893. Unique.

**200.** (64) *Hyposmocoma lacertella*, sp. nov. (Pl. XX. fig. 16).

Antennae tawny fuscous. Palpi tawny fuscous, whitish on the inner side of the median joint, and narrowly around the apex of the terminal joint. Head brownish fuscous. Thorax dark tawny fuscous. Forewings dark tawny greyish fuscous, with dirty white speckling beyond the middle; a small whitish smear, about the middle of the costa, is followed by a white spot at the commencement of the costal cilia, with another opposite to it at the tornus; a small spot in the fold at its outer third, a smaller one at the end of the cell, and several groups of whitish scales, before and about the apex, forming streaklets through the basal half of the costal and terminal cilia which are

tipped with whitish immediately below the apex, but otherwise tawny fuscous. Exp. al. 14—16 mm. Hindwings bronzy brownish fuscous; cilia tawny fuscous; ♂ without subcostal hair-pencil. Abdomen dark fuscous. Legs tawny greyish fuscous.

Type ♀ (28526); ♂ (28307) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft.; Haleakala, 5000 ft., v. 1896. Seventeen specimens.

**201.** (65) *Hyposmocomma trilunella*, sp. nov. (Pl. XX. fig. 17).

Antennae fuscous, the basal joint streaked with white above. Palpi greyish fuscous, a white spot at the end of the median joint. Head white; face grey. Thorax brownish fuscous. Forewings brownish fuscous, with a slight tawny gloss, cilia the same; with three rounded yellowish white spots, one on the middle of the fold, one, larger, on the cell above and beyond it, a third, still larger, at the end of the cell. Exp. al. 16 mm. Hindwings rather shining, steel-grey; cilia tawny grey. Abdomen greyish fuscous. Legs pale greyish fuscous, the tarsal joints marked with whitish.

Type ♀ (28247) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Seven specimens.

**202.** (66) *Hyposmocomma niveiceps*, sp. nov. (Pl. XX. fig. 18).

Antennae bronzy brownish above, paler beneath; basal joint snow-white. Palpi brownish fuscous, with a white band around the junction of the joints. Head white; face bronzy grey. Thorax dark bronzy brown. Forewings bronzy brown, with a conspicuous round snow-white spot at the end of the cell; a white spot crossing the fold beyond its middle and nearly confluent with a biocellate white spot on the disc, above and a little before it, having the form of an oblique figure 8, the upper dark dot preceding the lower; cilia bronzy brownish. Exp. al. 11—12 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey, anal tuft whitish. Legs cinereous; tarsi fuscous, obscurely banded with whitish.

Type ♂ (26470) *Lanai*, Mus. Wlsm.

HAB. LANAI: 2000—3000 ft., (5) I.—II. 1894; 2000 ft., (1) VII. 1894.—MOLOKAI: above 3000—4500 ft., (3) 13. VI.—VII. 1893. Nine specimens.

Variation: the white spot at the end of the cell is sometimes ocellate (26134 *Molokai*; 26471 *Lanai*); the two inner spots are sometimes confluent, no spot being ocellate (26403 *Molokai*); the three white spots become obsolete, their position indicated only by three or four white scales in each place (26450 *Molokai*); an intermediate form occurs with enlarged inner spots obscurely surrounded with whitish (26471 *Lanai*).

**203.** (67) *Hyposmocoma punctifumella*, sp. nov. (Pl. XX. fig. 19).

Antennae sooty black above, paler beneath; the basal joint yellowish white. Palpi fuscous, with a yellowish white ring around the junction of the joints. Head yellowish white, with a slightly raised blackish collar behind. Thorax dark sooty brown. Forewings dark sooty brown, with two yellowish white spots; the first pear-shaped, oblique, its base below the costa at two-fifths, its apex crossing the fold but not reaching the dorsum; the second roundish, at the end of the cell,—both conspicuous and clearly defined; cilia sooty brown. Exp. al. 12 mm. Hindwings and cilia brown-grey; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs brownish grey.

Type ♂ (28577) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., v. 1896. Unique.

**204.** (68) *Hyposmocoma lunifer*, sp. nov. (Pl. XX. fig. 20).

Antennae blackish. Palpi blackish, but with a whitish suffusion on the median joint. Head brown. Thorax tawny black. Forewings tawny black, with a conspicuous round white spot at the end of the cell; a black discal spot before the middle, narrowly encircled, except on its lower edge, by white; a black plical spot before it, also partially encircled by white, and preceded by some white scales in the fold; a few whitish scales along the termen at the base of the tawny blackish cilia. Exp. al. 14—15 mm. Hindwings brown-black; cilia tawny blackish. Abdomen black. Legs tawny brownish, with faint paler tarsal spots.

Type ♀ (28393) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Two specimens.

**205.** (69) *Hyposmocoma punctiplicata*, sp. nov. (Pl. XX. fig. 21).

Antennae brownish fuscous. Palpi brownish fuscous, with a pale spot at the end of each joint. Head brownish grey. Thorax dark bronzy brown. Forewings bronzy brown, with whitish ochreous spots, and some scattered scales; an obliquely transverse spot rests on the fold at one-fourth from the base, another on the dorsum below the outer end of the fold, a third, narrow and outwardly oblique, arises beyond the tornus, a rounder costal spot standing opposite to it; cilia tawny greyish fuscous. Exp. al. 15 mm. Hindwings and cilia brownish grey. Abdomen (missing). Legs brownish grey, with paler spots on the tarsal joints.

Type ♀ (26303) Mus. Wlsm.

HAB. MOLOKAI: above 4500 ft., 11. IX. 1893. Unique.

Allied to *lacertella*, but the ♂ is at present unknown.

**206.** (70) *Hyposmocomma marginenotata*, sp. nov. (Pl. XX. fig. 22).

Antennae dark brown. Palpi dark brown, with a pale ochreous patch at the end of the median joint. Head and Thorax dark brown. Forewings, ♂ with a slight costal fold and a strong fringe of scales extending beyond the middle on the under side; dark tawny brown, with a slender line of pale ochreous scales, commencing near the middle of the base, depressed obliquely to the dorsum where it is bestrewn with brown scales, and extending around the tornus, termen and apex to a small anteapical costal spot in a line of scarcely confluent small, pale ochreous, marginal spots along the base of the dark tawny brown cilia. Exp. al. 14—16 mm. Hindwings grey; cilia grey, with a brownish tinge; ♂ with a greyish subcostal hair-pencil. Abdomen and Legs brownish grey; the tarsi shaded.

Type ♂ (26768); ♀ (27332) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Mts., 3000—4000 ft., v.—vi. 1894. Thirty-five specimens.

In some specimens the ground-colour of the forewings is sooty brown and the ochreous markings are only represented by two faintly indicated opposite spots before the apex, and a series of indistinct terminal spots. The usual discal and plical spots are visible in specimens in which more or less admixture of ochreous scaling occurs among the dark ground-colour, but they are not traceable when this is absent.

**207.** (71) *Hyposmocomma vermiculata*, sp. nov. (Pl. XX. fig. 23).

Antennae and Palpi bronzy brown, the latter with a pale ochreous ring at the apex of the median joint and another at the tip of the terminal joint. Head and Thorax dark bronzy brown. Forewings dark bronzy brown, with a few pale ochreous scales, these form a small vermicular streak, in the basal half of the fold, which is preceded and followed by dark fuscous spots—these also occur at the end of the fold and on the outer half of the cell; a small pale ochreous spot lies at the commencement of the costal cilia and another on the termen opposite, but a little beyond it; cilia dark fuscous brown, with some ochreous scales along their base divided into minute spots. Exp. al. 14—15 mm. Hindwings and cilia pale tawny grey; ♂ without subcostal hair-pencil. Abdomen greyish fuscous. Legs pale tawny grey.

Type ♂ (28117) *Hawaii*, Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., (2) 9. VI. 1893.—HAWAII: Mt. Kilauea, (1) VII. 1895, (1) VIII. 1896; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892. Five specimens.

This species differs from *marginenotata* in the absence of the subcostal hair-pencil, in the presence of a minute pale streak in the basal half of the fold, in the less distinct spotting of the termen and in the position of the tornal spot which is a little beyond the opposite costal.

**208.** (72) *Hyposmocoma enixa*, sp. nov. (Pl. XX. fig. 24).

Antennae bronzy fuscous, the under side of the basal joint pale ochreous. Palpi bronzy fuscous, with a pale ochreous ring at the apex of the median joint. Head bronzy fuscous; face pale ochreous. Thorax dull bronzy fuscous. Forewings bronzy fuscous, with three dark fuscous spots, two discal, one plical, the latter preceding the first discal; cilia dull greyish fuscous. Exp. al. 14 mm. Hindwings pale grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen whitish cinereous. Legs pale brownish grey, the hind tarsi scarcely shaded.

Type ♂ (27932) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895. Three specimens.

Very similar to *fulvida*, but separable by the pale basal joint of the antennae, by the more bronzy tint, the somewhat more abrupt apex of the forewings, and the distinctly paler face. The spots are not ocellated as in *ocellata*. It is very close to *adolescens*, but the more yellowish bronzy fuscous of the forewings distinguishes it from the browner species which also possesses more strongly developed ♂ genital appendages and appears to be without doubt distinct.

**209.** (73) *Hyposmocoma lugens*, sp. nov. (Pl. XX. fig. 25).

Antennae rather stout, brownish fuscous. Palpi rust-brownish, the terminal joint fuscous externally. Head rust-brownish. Thorax brownish fuscous. Forewings brownish fuscous, with the usual three spots, very difficult to distinguish on the dark wing-surface; cilia smoky brownish fuscous. Exp. al. 13 mm. Hindwings brownish grey; cilia smoky brownish fuscous; ♂ without subcostal hair-pencil. Abdomen brownish fuscous. Legs greyish fuscous.

Type ♂ (26583); ♀ (28364) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., iii. 1894, v. 1896. Two specimens.

I have found no species which at all agrees with this. The wings are narrow, with very straight costa; the head, distinct in colour from the unicolorous forewings, leading one at first to suppose that it might be a suffused variety of some more clearly marked species, but I am quite unable to make it fall into any of the series.

**210.** (74) *Hyposmocoma ocellata*, sp. nov. (Pl. XX. fig. 26).

Antennae dark bronzy brown; basal joint streaked beneath with pale ochreous, and with a spot of the same colour at its outer end. Palpi shining, very pale ochreous, terminal joint completely shaded with bronzy brown, a slender pale ochreous line along the upper edge, not clearly defined. Head bronzy brown. Thorax bronzy brown, the



centre rather darker than the tegulae. Forewings shining, bronzy brown, with a purplish fuscous spot on the middle of the disc, another before it on the fold, and a smaller one at the end of the cell (this and the preceding discal spot are nearly connected by a streak of the same colour) each spot more or less distinctly outlined with very pale ochreous, of which a slender line runs to the lower edge of the streak on the outer half of the cell; cilia brownish grey. Exp. al. 15—18 mm. Hindwings very pale grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen shining, brownish grey. Legs brownish grey.

Type ♀ (27960); ♂ (27668) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Four specimens.

In some specimens a certain admixture of pale ochreous occurs above and below the outer end of the cell, giving the wing a somewhat streaky appearance.

This species is nearly allied to *fulvida*, but the hindwings are paler, the forewings more shining and the spots are pale-margined, whereas in the other species they show no ocellation.

**211.** (75) *Hyposmocoma adolescens*, sp. nov. (Pl. XX. fig. 27).

Antennae bronzy brown above; pale cinereous, barred with brown beneath. Palpi dark brown, blending to pale brassy ochreous on their inner sides and around the apex of the median joint. Head and Thorax bronzy brown above; the upper part of the face pale brassy ochreous. Forewings and cilia bronzy brown, the latter becoming brownish grey towards the tornus; with three dark fuscous spots, one on the middle of the fold, one beyond it on the cell, another at the end of the cell. Exp. al. 15 mm. Hindwings pale grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen whitish grey. Legs whitish grey, with brownish shading around the tarsi.

Type ♂ (27474) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1895. Unique.

Closely allied to *ensifer*, but distinguished by its dark palpi and the darker ground-colour of the forewings which lacks the ochreous suffusion of that species.

**212.** (76) *Hyposmocoma emendata*, sp. nov. (Pl. XX. fig. 28).

Antennae tawny fuscous. Palpi brassy ochreous, the terminal joint shaded beneath with fuscous. Head and Thorax bronzy fuscous, the face paler. Forewings dark bronzy fuscous, mixed with more or less ochreous along the fold, and sometimes on the discal area and at the tornus; the dark discal and plical spots are not ocellate; cilia smoky fuscous. Exp. al. 17—18 mm. Hindwings and cilia dark brownish fuscous; ♂ without subcostal hair-pencil. Abdomen brownish fuscous. Legs brownish fuscous, with a few indistinct paler spots at the joints; hind tibiae hairy.

Type ♂ (28289); ♀ (28284) Mus. Wlsm.

HAB. MAUI: Haleakala, above 5000 ft., (1) iv. 1894, 5000 ft., (4) v. 1896. Five specimens.

*Hypsmocoma* spp.?

Two specimens in poor condition may represent distinct species.

HAB. OAHU: Waianae Mts., 3000 ft., iv. 1892 (25127, Mus. Wlsm).—MOLOKAI: above 3000 ft., 30. v. 1893 (26071, Mus. Wlsm).

**213.** (77) *Hypsmocoma ensifer*, sp. nov. (Pl. XXI. fig. 1).

Antennae cinereous, the basal joint pale ochreous. Palpi very long, slender, terminal joint as long as median; whitish ochreous. Head and Thorax bronzy; face shining whitish; tegulae bronzy. Forewings ochreous, smeared with bronzy brownish along the margins and towards the apex, sometimes more generally suffused with the same; with four dark fuscous spots, one on the cell and one at the end of the cell, each slightly preceded by a more elongate spot on the fold, the outer plical spot sometimes obliterated; cilia brownish grey. Exp. al. 15 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen greyish fuscous, anal tuft pale ochreous. Legs pale ochreous, more or less shaded transversely with fuscous.

Type ♂ (27472) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII.—VIII. 1895. Five specimens.

This species separates itself, from *emendata* and *adolescens*, by its white face and uniformly pale palpi, and although variable in the extent of the dark suffusion I cannot venture to describe the darker and lighter forms as distinct.

*Hypsmocoma* spp.?

Three specimens in poor condition may represent distinct species.

HAB. MAUI: Haleakala, 3000 ft., III. 1894 (26558, Mus. Wlsm).—MOLOKAI: above 3000 ft., 13. VI. 1893 (26293, 26249, Mus. Wlsm.).

**214.** (78) *Hypsmocoma tricineta*, sp. nov. (Pl. XXI. fig. 2).

Antennae brownish fuscous. Palpi, median joint white, brownish at the base; terminal joint as long as median, brownish fuscous, except at its base which is white. Head and face shining, cream-white. Thorax brownish fuscous. Forewings brownish fuscous, with three blackish spots; one in the form of an elongate streak lying in the fold scarcely beyond its middle, with a small one above it on the cell, the third larger,

obliquely ovoid, at the end of the cell; these spots are all placed in a connected irregular white patch which is somewhat diffused toward the costa beyond the middle, but forms a clear margin around the spots themselves (the lower edge of the plical spot sometimes excepted); cilia brownish cinereous. Exp. al. 14—15 mm. Hindwings shining, pale grey; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Abdomen pale brownish cinereous. Legs pale brownish cinereous, the tarsi with faint paler bands.

Type ♀ (25435); ♂ (25434) Mus. Wlsm.

HAB. HAWAII: Kona, above 2000—4000 ft., 4. VIII.—IX. 1892; Mt. Kilauea, (1) VII. 1895. Six specimens.

**215.** (79) *Hyposmocoma semifuscata*, sp. nov. (Pl. XXI. fig. 3).

Antennae smoky fuscous, basal joint white beneath. Palpi white, shaded with smoky fuscous externally nearly to the end of the median joint and nearly to the base of the terminal. Head white, sometimes slightly smoky above; face white. Thorax smoky fuscous. Forewings white, sprinkled with smoky fuscous, with a smoky fuscous shade from the base extending along the costa and dorsum and sometimes almost obliterating the elongate black plical spot which is situated before the first discal; this and the outer discal spot are also black and clearly defined; the apex is slightly smoky in some specimens; cilia whitish, varying to smoky, especially along the dorsum. Exp. al. 12—15 mm. Hindwings shining, pale grey; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Abdomen smoky whitish. Legs dirty whitish, with some smoky tarsal bands; these are scarcely traceable in the paler varieties.

Type ♂ (25395); ♀ (25270) Mus. Wlsm.

HAB. HAWAII: Kona, above 2000—4000 ft., (2) VI. 1892, (9) IX. 1892. Eleven specimens.

Separated from *tricincta* by the limited extent of the darker shading, by the position of the plical spot, which in that species is produced outward, often beyond the first discal, and by the colour of the palpi.

**216.** (80) *Hyposmocoma pucciniella*, sp. nov. (Pl. XXI. fig. 4).

Antennae dark brown, faintly annulate with pale straw-ochreous. Palpi pale straw-ochreous, shaded with fuscous along the outer side. Head and Thorax pale straw-ochreous, tegulae dark brown at the base. Forewings pale straw-ochreous, rather distinctly marked with dark brown; a dark brown streak from the base follows the fold along two-thirds of its length; a small patch at the base, below the fold, and a few scales scattered along the costa—these three markings sometimes coalesce towards the base; an elongate dark brown median spot on the discal cell and a second, rounder one,

at its outer end, the latter almost concealed by a dark bronzy brown shade over-spreading the apical area beyond the cell—this shade is slightly diffused inward below the lower angle; costal cilia brown, terminal cilia pale straw-ochreous. Exp. al. 13—15 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen greyish brown. Legs pale brownish grey.

Type ♀ (27381); ♂ (27408) Mus. Wlsm.

HAB. HAWAII: Kona, 3500—5000 ft., 29. VI.—10. VIII. 1892; Mt. Kilauea, VI.—VII. 1895. Thirteen specimens.

Veins 7 and 8 of the forewings are exceptionally connate.

**217. (81) *Hyposmocoma scepticella*, sp. nov.**

217<sup>a</sup>. (81<sup>a</sup>) *scepticella*, sp. nov. + *scepticella*, var. nov. (Pl. XXI. fig. 6).

Antennae, ♂ dark fuscous: paler in ♀. Palpi whitish ochreous. Head and Thorax ochreous; face whitish ochreous; tegulae pale ochreous, touched with fuscous at the base. Forewings bright ochreous, with a fuscous spot at the base of the costa, a few fuscous limbal scales, a discal spot about the middle, another at the end of the cell and one at the end of the fold, before the tornus, touching the dorsum; the outer discal spot sends forward a diffused and somewhat dilated fuscous shade to the costal cilia a little before the apex, the tornal spot is also sometimes diffused outwards; terminal cilia ochreous, dorsal cilia smoky fuscous; under side uniformly dark smoky grey, except a small ochreous spot on the termen below the apex, the terminal cilia are also ochreous. Exp. al. 14—16 mm. Hindwings, ♂ without subcostal hair-pencil; dark smoky fuscous, cilia slightly browner than the wing: ♀ paler than in the ♂. Abdomen dark smoky fuscous. Legs smoky grey, with faint paler spots.

Type ♂ (26650); ♀ (26675) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., IV. 1894. Three specimens.

This species differs from *stigmatella* notably in the pale ochreous tegulae, those of *stigmatella* being always brownish fuscous.

217<sup>b</sup>. (81<sup>b</sup>) *scepticella*, Wlsm. + *dubia*, var. nov. (Pl. XXI. fig. 5).

In three specimens the basal joint of the antennae is ochreous, the general colour of the wing being slightly paler, and in two of these the dark shading towards the apex is omitted the spots also being less distinct.

Type ♂ (28496); ♀ (28534) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000—5000 ft., V. 1896; Olinda (Haleakala), 4000 ft., V. 1896. Three specimens.

**218.** (82) *Hyposmocomma stigmatella*, sp. nov. (Pl. XXI. fig. 7).

Antennae brownish fuscous, barred with ochreous beneath. Palpi, ♀ whitish, with a slight brownish fuscous shade along the outer side of the median joint and beneath the terminal joint: ♂ without dark shading. Head and Thorax whitish ochreous, tegulae brownish fuscous. Forewings, ♀ rich ochreous, with a brownish fuscous spot at the base, throwing a short projection along the costa, and another, parallel with the dorsum and almost touching it; a brownish fuscous spot on the middle of the fold is followed by another on the disc obliquely above and beyond it, and there is an indication of a dark fuscous spot at the end of the cell, connected with a triangular dorsal shade beneath it, as well as with a similar brownish fuscous shade extending to the apex and embracing the costal cilia beyond and above it; cilia brownish grey: ♂ paler than the ♀, with the markings obsolete, except the spot at the base with costal and subdorsal projections, an obscure dark spot at the end of the cell, a few dark scales at the tornus and on the costa before the apex; terminal cilia pale ochreous, tornal cilia brownish grey; under side leaden grey, cilia as on the upper side in both sexes, but the pale ochreous extends narrowly along the costa for about half its length in the ♂, and the termen is obscurely spotted with ochreous in the ♀. Exp. al. 12—14 mm. Hindwings leaden grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen dark brownish grey; anal tuft of ♂ subochreous. Hind Legs whitish cinereous beneath, much shaded with dark brownish grey above.

Type ♀ (26353); ♂ (26354) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., (1) 9. VI. 1893, about 4500 ft., (3) 23. IX. 1893. Four specimens.

This species may be distinguished from *scepticella* by its brownish fuscous tegulae.

**219.** (83) *Hyposmocomma pallidipalpis*, sp. nov. (Pl. XXI. fig. 8).

Antennae serrate; dull brownish cinereous, the basal joint pale ochreous. Palpi pale ochreous. Head and face grey. Thorax brownish grey, the tegulae yellowish brown. Forewings yellowish brown, with a small darker spot about the middle of the fold and another more distinct at the end of the cell; cilia greyish brown. Exp. al. 12 mm. Hindwings pale leaden grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen (missing). Legs pale cinereous.

Type ♂ (26106) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., 9. VI. 1893. Unique.

**220.** (84) *Hyposmocoma genitalis*, sp. nov. (Pl. XXI. fig. 9).

Antennae pale fawn-ochreous, basal joint with a slightly darker shade above. Palpi pale fawn-ochreous, with a shade-ring near the apex of the median joint and another at the base of the terminal. Head and Thorax fawn-ochreous; face very pale fawn-ochreous. Forewings pale fawn-ochreous, smeared with fawn-brownish, especially along the dorsum and beyond the end of the cell; some scattered fawn-brownish spots are somewhat ill-defined—one at the extreme base of the costa is almost fuscous; one at the commencement of the outer third of the fold, rather paler, followed by a patch at the tornus; a spot at the end of the cell, preceded by a smaller one, and a shade on the costa above it; another spot is indicated near the base of the fold, and a small subcostal spot a little before the middle; the margins above and below the apex have a slightly dentate appearance owing to a thin broken line of fawn-brownish scales at the base of the pale fawn-ochreous cilia. Exp. al. 18—20 mm. Hindwings shining, pale brownish grey; cilia brownish grey; ♂ with a pale yellowish ochreous subcostal hair-pencil. Abdomen grey; genital appendages upturned, very largely developed, appearing to terminate above in two rounded knobs. Legs very pale fawn-ochreous.

Type ♂ (28560); ♀ (28572) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., v. 1896. Two specimens.

**221.** (85) *Hyposmocoma fractinubella*, sp. nov. (Pl. XXI. fig. 10).

Antennae pale brownish, faintly annulate. Palpi whitish ochreous, the median joint shaded at its base and spotted near its apex with fuscous. Head and Thorax whitish ochreous. Forewings whitish ochreous, with broken bronzy brown shades and spots; a fuscous shade at the base of the costa is diluted into bronzy brown, following the upper edge of the cell to half its length, a diffused spot of the same colour on the outer end of the cell, an oblique darker spot preceding it on the fold below; the dorsum is clouded with a bronzy brown diffused shade, obliquely upturned and darkened about the tornus, with some similar diffused scales between its apex and the commencement of the costal cilia; a triangular dark spot at the extreme apex is narrowly diffused inward along the costa and termen before the base of the whitish ochreous cilia, through the middle of which runs a bronzy brown shade-line passing around the apex. Exp. al. 14—15 mm. Hindwings and cilia brownish grey; ♂ with an ochreous subcostal hair-pencil. Abdomen dark grey, anal tuft shining whitish. Legs whitish ochreous, the tarsi with faint shade-bands.

Type ♂ (28559); ♀ (28573) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., v. 1896. Seven specimens.

**222.** (86) *Hyposmocoma* (?) *fractivittella*, sp. nov. (Pl. XXI. fig. 11).

Antennae whitish ochreous, spotted above with brownish fuscous; a brownish fuscous streak along the basal joint above. Palpi whitish ochreous, shaded with brownish fuscous externally throughout. Head and face whitish ochreous. Thorax whitish ochreous, shaded along the middle and on the base of the tegulae with brownish fuscous. Forewings whitish ochreous, a long brownish fuscous streak extends from the base of the costa along the upper edge of the cell, terminating in a spot at its outer end; a narrow costal shade, commencing at three-fifths from the base, reaches nearly to the apex, a dorsal shade of the same colour from base to tornus; above the latter a small spot in the middle of the base and another in the middle of the fold; cilia pale brownish ochreous. Exp. al. 13 mm. Hindwings and cilia pale brownish grey. Abdomen pale brownish fuscous above, whitish ochreous at the sides and beneath. Legs whitish ochreous, the tarsi faintly shaded above.

Type ♀ (26743) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., vi. 1894. Unique.

This species probably belongs to a new genus differing from *Hyposmocoma* in having veins 4 and 5 of the forewings stalked, thus approaching *Dysphoria* from which, however, it differs in the remote origin of veins 4 and 5 of the hindwings. It would be unwise to found a new genus in this group on a single ♀ which may be merely of abnormal structure.

**223.** (87) *Hyposmocoma intermixta*, sp. nov. (Pl. XXI. fig. 12).

Antennae brownish grey, with faint paler annulations. Palpi very pale ochreous, suffused with greyish fuscous externally nearly to the apex of the median joint and around the base and apex of the terminal joint. Head and Thorax pale dingy ochreous, a grey shade on the middle of the latter. Forewings pale dingy ochreous, with a fuscous streak along the basal half of the costa, a broad fuscous shade along the outer third of the cell, scarcely separated from a narrower shade along the middle of the fold, below which the dorsum is slightly shaded with brownish fuscous, a narrow diffused band of the same running around the apex and termen and spreading over the base of the greyish ochreous cilia. Exp. al. 14 mm. Hindwings and cilia brownish grey. Abdomen dark brownish grey. Legs brownish grey.

Type ♀ (26104) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., 9. vi. 1893. Unique.

**224.** (88) *Hyposmocoma geminella*, sp. nov. (Pl. XXI. fig. 13).

Antennae white, with faint brownish annulations. Palpi white, a brownish streak on the outer side of the basal half of the median joint and a faint ring near its apex; also a small dark spot at the base of the terminal joint. Head and Thorax white; tegulae blotched with pale brownish fuscous. Forewings shining, white, a slight brassy suffusion outwardly, especially near the costa above the end of the cell; two pale brownish fuscous streaks arising from the base, the first following the costa to two-fifths, but slightly separated from it in the ♂; the second following the lower edge of the cell as far as the middle of the wing where it terminates in a small plical spot; obliquely placed above and beyond it is a discal spot, followed by another at the end of the cell; a few brownish fuscous scales about the tornus are matched on the costa above it, and in some specimens a series of spots occurs in the terminal and costal cilia before the apex; cilia whitish, with an ochreous tinge. Exp. al. 13—17 mm. Hindwings grey; cilia brownish cinereous; ♂ with a pale ochreous subcostal hair-pencil. Abdomen brownish fuscous; anal appendages of the ♂ white. Legs dirty white.

Type ♂ (27212); ♀ (27545) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., (4) v. 1895; Mts., 3000—4000 ft., (1) vi. 1894. Five specimens.

The distinct subdorsal streak along the lower edge of the cell serves to separate this species from *picticornis*, which in other respects it greatly resembles, having very similar ornamentation on the palpi, but *picticornis* lacks the subcostal hair-pencil.

**225.** (89) *Hyposmocoma picticornis*, sp. nov. (Pl. XXI. fig. 14).

Antennae, ♂ pale brownish grey, the basal joint whitish, with an elongate dark brown spot above: ♀ pale bronzy, faintly annulate with whitish. Palpi white, the median joint with a dark brown annulus before the apex and a dark brown streak along the basal half externally, terminal joint with a dark brown spot above at its base and a slight ochreous tinge towards its apex; ♀ with the terminal joint longer than the median. Head and Thorax shining, white, a bronzy spot at the base of the tegulae. Forewings, ♂ silvery white, with a diffused pale greyish brown streak along the costa from the base to one-third, a small greyish brown spot on the fold beyond its middle, a similar spot obliquely above and beyond it on the cell, followed by a smaller spot at the end of the cell, from this last a few scattered brownish ochreous scales extend to the costa above and to the tornus beneath (in some specimens a dark costal and a tornal spot are also visible); some narrow confluent greyish brown spots occur round the apex at the base of the cilia which are light brownish ochreous: ♀ shining, silvery white, with a bronzy shade at the base of the costa, extending to one-third, leaving a whitish space on the



costa about its middle; a bronzy dorsal streak extends from near the base, along the margin nearly to the tornus, almost touching a dark bronzy plical spot, beyond the middle of the fold, which is succeeded on the cell above by two dark bronzy discal spots, one before and one at the end of the cell; the costa above these and the apical region beyond them is bestrewn with bronzy scales, a dark broken line running around the apex at the base of the pale bronzy cilia. Exp. al. 14—18 mm. Hindwings shining, grey, cilia with a brownish tinge; ♂ without subcostal hair-pencil. Abdomen brownish grey, anal tuft inclining to ochreous. Legs whitish, with darker tarsal spots, hind tibiae with pale ochreous hairs.

Type ♂ (26177); ♀ (26283) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., (10) 30. v.—12. vi. 1893.—MAUI: Olinda (Haleakala), 4000 ft., (2) v. 1896. Twelve specimens.

**226.** (90) *Hyposmocoma phantasmatella*, sp. nov. (Pl. XXI. fig. 15).

Antennae bone-white, dotted above with fuscous, basal joint fuscous. Palpi bone-white, median joint fuscous externally; terminal joint longer than median, shaded with fuscous along the sides. Head and Thorax bone-white. Forewings, ♀ bone-whitish, with a minute fuscous dot in the middle of the fold, another scarcely beyond it on the disc, with a larger one at the end of the cell; a few fuscous streaks in the bone-white cilia, and a small fuscous shade at the base of the costa: ♂ with the discal and plical spots much more clearly exhibited and with an additional fuscous shade towards the end of the fold beneath the outer discal; the spotting around the termen and apex much more distinct and the costa slightly shaded throughout. Exp. al. 12—15 mm. Hindwings pale brownish grey; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Abdomen whitish. Legs whitish, the tarsi and outer sides of the hind tibiae shaded with pale fuscous bands.

Type ♀ (27750); ♂ (26763) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895; Mts., 3000—4000 ft., v. 1894. Two specimens.

Allied to *geminella* but without the distinct dark shades from the base and lacking the subcostal hair-pencil.

**227.** (91) *Hyposmocoma ossea*, sp. nov. (Pl. XXI. fig. 16).

Antennae cinereous. Palpi bone-white, the outer side of the median joint greyish fuscous nearly to its apex. Head and Thorax bone-white; the face somewhat flattened. Forewings bone-white, a short blackish streak along the extreme base of the costa, a brownish fuscous spot in the middle of the fold, a smaller one above and beyond

it on the cell, a third at the end of the cell; cilia bone-whitish, with a slight greyish tinge; under side greyish fuscous. Exp. al. 16—17 mm. Hindwings and cilia grey; under side leaden grey; ♂ without subcostal hair-pencil. Abdomen grey, darker than the hindwings. Legs missing; (very pale cinereous, unmarked, in the paratype).

Type ♂ (25787) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., 4. VII.—9. VIII. 1892. Two specimens.

**228.** (92) *Hyposmocoma argentea*, sp. nov. (Pl. XXI. fig. 17).

Antennae, ♂ minutely serrate, whitish, with a slight brownish ochreous tinge, basal joint white: ♀ pale ochreous, delicately barred above with brown. Palpi white, with a slight brownish shade on the basal half of the median joint externally (rarely entirely white). Head and Thorax silvery white. Forewings silvery white; sometimes with minute groups each consisting of two or three blackish scales, one on the cell about the middle, one before and below it about the middle of the fold, and one equidistant beyond it scarcely above the fold; cilia tinged with ochreous around the costa and termen; under side dark brownish grey, costa narrowly white throughout, cilia whitish. Exp. al. 18—20 mm. Hindwings rather pale grey; cilia pale brownish grey; under side pale grey, apical cilia whitish; ♂ without subcostal hair-pencil. Legs, anterior pair brownish grey; median and posterior pairs whitish.

Type ♂ (26123); ♀ (26189) Mus. Wlsm.

HAB. MOLOKAI: (1) 22. V. 1893, 9. VI. 1893, VI. 1896, (1) 12. VII. 1893. Fourteen specimens.

This species differs from *subargentea* in the much paler median joint of the palpi, in the yellower cilia, especially at the tornus, and in the noticeably shorter and stouter abdomen.

**229.** (93) *Hyposmocoma subargentea*, sp. nov. (Pl. XXI. fig. 18).

Antennae pale ochreous, faintly annulate, basal joint white. Palpi white, the median joint smeared externally, nearly to its apex, with dark brown. Head and Thorax silvery white; face brown, with a few white scales at the base of the haustellum. Forewings silvery white, a minute brownish fuscous dot at the end of the cell, a group of two or three brownish scales in the middle of the fold, with a similar minute group on the cell above and beyond them; cilia silvery white, with a faint greyish suffusion about the tornus; under side dark leaden grey, costal and terminal cilia white. Exp. al. 18 mm. Hindwings rather dark grey; cilia pale brownish grey, tending to whitish about the apex; under side dark leaden grey, apical cilia white; ♂ without subcostal hair-pencil. Legs, anterior and median leaden grey; posterior pale brownish grey, tarsal joints faintly spotted with whitish.

Type ♂ (26867) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

This species differs from *argentea* in the dark face and more suffused median joint of the palpi; the cilia of the forewings are also whiter, and the abdomen is longer and more slender.

**230.** (94) *Hyposmocoma lactea*, sp. nov. (Pl. XXI. fig. 19).

Antennae, ♂ dark umber-brown; ♀ cream-white, annulate with umber-brown; basal joint cream-whitish, shaded with umber-brown. Palpi cream-white, an umber-brown shade along the outer side of the median joint. Head and Thorax cream-white; the tegulae touched with dark brown at the base. Forewings cream-white, with a narrow dark umber-brown shade along the costa from base to middle; a dark brown dorsal shade beyond the middle (in some varieties reduced to a few dark scales near the tornus); exceptionally with a dark spot in the fold or at the end of the cell; cilia cream-whitish (sometimes suffused with ochreous or brownish ochreous), tornal cilia greyish; underside greyish fuscous, costa and cilia whitish. Exp. al. 15—16 mm. Hindwings and cilia brownish grey; costal cilia whitish; ♂ with a pale greyish white subcostal hair-pencil. Abdomen greyish brown above, anal tuft and underside whitish. Legs, anterior blackish; posterior pale brownish ochreous, hind tarsi with brownish spots.

Type ♂ (27549); ♀ (27186) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895; Mts., 3000—4000 ft., VI. 1894. Sixteen specimens.

**231.** (95) *Hyposmoconia lacticretella*, sp. nov. (Pl. XXI. fig. 20).

Antennae (♀) slightly serrate; dark tawny fuscous. Palpi chalk-white, dark tawny fuscous to near the end of the median joint externally, and around the apex of the terminal joint. Head and Thorax chalky white. Forewings chalky white, with a faint ochreous suffusion to beyond the middle, a narrow dark tawny fuscous streak runs along the costa to beyond the middle, and below its pointed outer extremity is a tornal patch of the same colour with a few sparsely scattered scales below the fold; cilia chalky whitish, with a grey shade-line in their middle about the tornus. Exp. al. 12 mm. Hindwings and cilia pale brownish cinereous. Abdomen brownish cinereous, anal tuft ochreous. Legs smoky fuscous, the basal half of the hind tibiae whitish.

Type ♀ (26693) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., IV. 1894. Unique.

**232.** (96) *Hyposmocoma persimilis*, sp. nov. (Pl. XXI. fig. 21).

Antennae white, faintly annulate with greyish brown; basal joint white. Palpi, median joint brownish fuscous nearly to its apex which is white; terminal joint white throughout, except a small brownish spot near its apex above. Head and Thorax white. Forewings white, with a small brownish spot at the base of the costa, a second costal spot before and a third beyond the middle, the last two somewhat elongate, the extreme costal margin very narrowly white above the outer one; there is a slight dusting of brownish fuscous scales in outwardly augulated lines, apparently in connection with these costal spots, but very thinly scattered except in two small groups on the dorsum, one before and one beyond the middle; a line of similar scales runs around the apex at the base of the white cilia which become brownish grey towards the tornus and are slightly sprinkled with brownish fuscous in that direction. Exp. al. 13—14 mm. Hindwings and cilia pale greyish brown; ♂ without subcostal hair-pencil. Abdomen greyish brown, anal segment inclining to ochreous. Legs whitish cinereous.

Type ♂ (25404); ♀ (27491) Mus. Wlsm.

HAB. HAWAII: Kona, 3500 ft., (4) 26—29. VI. 1892, 5000 ft., (1) 30. VI. 1892, 4000 ft., (7) VII., (5) 4—10. VIII. 1892, 4000 ft. and upward, (2) IX. 1892. Nineteen specimens.

This species differs from *Hyposmocoma albonivea* in the white face and basal joint of the antennae, in the browner shade of the markings, and in the absence of a distinct tornal spot, as also in the almost wholly white terminal joint of the palpi and in the paler legs and tarsi. Varieties of *carbonenotata* which have the first and second dorsal spots obsolete may be distinguished by the black basal joint of the antennae, and by the subcostal hair-pencil in the ♂.

**233.** (97) *Hyposmocoma trimaculata*, sp. nov. (Pl. XXI. fig. 22).

Antennae dirty whitish, faintly barred above with brownish cinereous. Palpi whitish, the median joint almost entirely suffused with fuscous, the terminal joint with a fuscous ring before the apex. Head and face white. Thorax dirty white. Forewings white, sprinkled with brownish cinereous scales, more profusely on the dorsal third, beyond the end of the cell, and along the termen; on the costa are three elongate dark fuscous patches, one at the base narrowly connected with the second which extends a little beyond one-third, the third at about two-thirds; cilia dirty whitish, mottled with brownish cinereous. Exp. al. 11 mm. Hindwings and cilia pale brownish grey; ♂ with a pale brownish grey subcostal hair-pencil. Abdomen brownish grey. Legs pale greyish fuscous, dirty whitish on their inner sides and at the tarsal joints.

Type ♂ (25104); ♀ (25103) Mus. Wlsm.

HAB. OAHU : Waianae Mts., 2000 ft., IV. 1892. Two specimens.

The markings are much less distinct and the ground-colour more sordid than in *carbonenotata*, which moreover has the basal joint of the antennae black.

**234.** (98) *Hyposmocoma albonivea*, sp. nov. (Pl. XXI. fig. 23).

Antennae white, delicately annulate with sooty black ; basal joint black. Palpi, median joint black, white at its extreme apex ; terminal joint white, with a black spot at its base beneath, and a black ring before its apex. Head white ; face black. Thorax and tegulae white. Forewings shining, snow-white, with a black spot at the base of the costa, another on the costa before the middle, a third, larger and more triangular, commencing scarcely beyond the middle and reaching to the costal cilia ; below and beyond this is an obtusely triangular black dorsal spot at the outer extremity of the fold ; the base of the white cilia about the apex and termen is sparsely peppered with black scales ; tornal cilia brownish cinereous. Exp. al. 12 mm. Hindwings and cilia brownish cinereous. Abdomen dark brownish cinereous, anal segment ochreous. Legs brownish fuscous, with white spurs and tarsal spots ; the long hairs above the hind tibiae whitish cinereous.

Type ♀ (26014) Mus. Wlsm.

HAB. OAHU : Waianae Mts., IV. 1892. Unique.

**235.** (99) *Hyposmocoma carbonenotata*, sp. nov. (Pl. XXI. fig. 24).

Antennae white, annulate with black ; basal joint black. Palpi, median joint black, apex white ; terminal joint white, with a black ring before the tip. Head and Thorax white, the latter with a black spot posteriorly and another at the base of the tegulae. Forewings white, with six black marginal streaks, three costal and three dorsal ; the first costal streak is at the base, pointing obliquely outward parallel with the fold, somewhat wedge-shaped, a narrow black line along the extreme margin connects it with a narrow elongate costal spot at about one-third, also with a smaller wedge-shaped costal spot a little beyond the middle ; on the dorsum are three wedge-shaped spots, all pointing obliquely outward, the first small, near the base, the second larger, scarcely before the middle, the third about the tornus and somewhat nearer to the apex than the outer costal spot above it ; the white apical and terminal portions of the wing and the white cilia are sprinkled with blackish scales, the tornal cilia being brownish grey. Exp. al. 14 mm. Hindwings grey ; cilia brownish grey ; ♂ with a greyish subcostal hair-pencil. Abdomen dark brownish fuscous ; ♂ with the anal segments large and blunt, lateral plates strongly developed. Legs brownish fuscous with white spurs, white tarsal annulations and whitish hairs on the hind tibiae.

Type ♂ (27144); ♀ (26973).

HAB. KAUAI: Mts., 3000—4000 ft., (10) v.—vi. 1894; Halemanu, 4000 ft., (1) v. 1895. Eleven specimens.

The species varies slightly and in two specimens the first and second dorsal spots are almost obliterated.

**236.** (100) *Hyposmocoma alliterata*, sp. nov. (Pl. XXI. fig. 25).

Antennae white, annulate with brownish fuscous; basal joint brownish fuscous. Palpi white, the median joint with a brownish fuscous spot beneath at the base and a ring of the same colour before its apex; terminal joint with a brownish fuscous ring before its apex. Head white. Thorax white, with brownish fuscous spots posteriorly and on the tegulae. Forewings silvery white (sometimes with a greenish tinge), with distinct brownish fuscous markings; an oblong patch at the base of the costa; a rather longer patch at the base of the dorsum, its apex turning upward to the fold; a long boot-shaped streak from the costa at one-third, slightly dilated on the costa, extends obliquely outward, the heel crossing the fold, the toe obtusely terminated on the cell above in the direction of a costal spot at two-thirds; an elongate dorsal spot about the tornus, with a small spot at the end of the cell above it and a triangular patch at the apex running through the apical cilia; terminal cilia white, greyish about the tornus. Exp. al. 13—14 mm. Hindwings grey; cilia brownish grey; ♂ with a dark grey subcostal hair-pencil. Abdomen pale brownish cinereous; ♀ with the terminal segments greyish fuscous. Legs pale brownish cinereous, tarsi spotted with greyish fuscous.

Type ♂ (26151); ♀ (26200) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: above 3000—4000 ft., (6) 5. v.—12. vi. 1893.—MAUI: Haleakala, below 4000—5000 ft., (2) v. 1896.—HAWAII: Kona, 3500—5000 ft., (4) 29. vi.—4. vii. 1892. Twelve specimens.

**237.** (101) *Hyposmocoma nigrodentata*, sp. nov. (Pl. XXI. fig. 26).

Antennae black above, sprinkled with white scales; basal joint black, its apex white. Palpi white, sprinkled with black scales on the outer side of the median joint nearly to its apex; terminal joint also sprinkled with black and with a black ring at its base. Head and Thorax chalky white. Forewings chalky white, a black streak along the base of the costa, and another, at the base of the dorsum, are obliquely bent at their outer ends, converging in an acute angle at about one-fourth from the base, thus enclosing a white quadrangular basal patch; a little beyond one-third is a black costal patch, and another quadrate black patch at two-thirds; on the dorsum are two black outwardly oblique dentate patches, the outer one, before the tornus, reaching scarcely

beyond the costal patch above it ; the apex and termen are narrowly black at the base of the blackish cilia which become grey towards the tornus. Exp. al. 11 mm. Hindwings and cilia pale, shining, brownish grey. Abdomen brownish grey. Legs whitish, with black tarsal annulations.

Type ♀ (26964) ; ♂ (26970) Mus. Wlsm.

HAB. KAUAI : Mts., 3000—4000 ft., v. 1894. Three specimens.

This species differs from *obliterata* in the dark cilia and the black margin to the termen and apex.

**238.** (102) *Hyposmocoma obliterata*, sp. nov. (Pl. XXI. fig. 27).

Antennae greyish fuscous, faintly annulate ; the end of the basal joint white. Palpi white, barred with greyish fuscous externally near the end of the median joint and near the base and tip of the terminal. Head and Thorax white. Forewings white, with a broken fuscous shade extending to three-fourths from the base and a few fuscous scales at the apex ; the fuscous shade is broken by a small white patch on the middle of the costa, by a small white patch at the base of the fold, and by two outwardly oblique dorsal patches, one before and another smaller one about the middle ; the outer edge of the dark shade is clearly defined against the white apical fourth and is slightly concave ; cilia white, becoming greyish about the tornus. Exp. al. 13 mm. Hindwings and cilia pale brownish grey. Abdomen fuscous. Legs whitish, the outer sides of the tibiae slightly shaded posteriorly.

Type ♂ (26965) ; ♀ (26971) Mus. Wlsm.

HAB. KAUAI : Mts., 3000—4000 ft., v. 1894. Three specimens.

In the ♀ the markings are blackish and the white dorsal patch extends broadly to the costa, where it is irrorated with blackish, leaving an angulated blackish basal patch clearly defined. Closely allied to *nigrodentata* but differing in the white cilia and in the absence of the black margin to the termen and apex.

**239.** (103) *Hyposmocoma bacillella*, sp. nov. (Pl. XXI. fig. 28).

Antennae greyish fuscous, the basal joint black. Palpi white, sprinkled with black externally and around the terminal joint. Head and Thorax chalk-white. Forewings chalk-white, with a blackish streak, sprinkled with white scales, running along the costa from the base nearly to the middle and sending off two outwardly oblique projections from its lower side, the first reaching the fold, but not the second ; at about half the wing-length is a black spot in the fold, above and a little beyond this is a black streak along the outer third of the cell, narrowly connected below its apex with a black spot about the tornus ; the apex and termen are mottled with dark fuscous, and the greater part of

the wing-surface is sprinkled with the same, especially between the discal streak and the costa; cilia pale greyish cinereous. Exp. al. 11—12 mm. Hindwings and cilia pale greyish cinereous; ♂ with pale greyish subcostal tuft. Abdomen and Legs pale brownish cinereous, the tarsi faintly spotted with fuscous.

Type ♂ (27971) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (4) v. 1894; Halemanu and Kaholuamano, 4000 ft., Larva on "Lehua" (*Metrosideros polymorpha*?) and other trees, iv. (1) excl. v. 1895. Five specimens.

In some varieties the wings are much suffused with blackish and fuscous, the white ground-colour being only noticeable as a few small spots near the base, two dorsal spots and an angulated fascia, formed by narrow streaks from the tornus and costa, beyond which the apical portion of the wing is more or less suffused with brown. In these varieties the second projection from the blackish costal streak being surrounded by white becomes somewhat conspicuous, as also the thorax which is creamy white.

The larva lives in an elongate conical case, with overlapping lip at the anterior end, the narrower posterior end being obtuse and the whole case having much the appearance of a piece of birch bark, but somewhat darker on the upper than on the under side, the division between the darker and lighter portions being straight and clearly defined. For pupation the case is attached by a short, stiff, thick silken stem from the middle of its underlip to the midrib of the leaf. The case is suspended parallel with the plane of the leaf, two or three fine silk threads attaching its anal extremity to the leaf.

**240.** (104) *Hyposmocoma canella*, sp. nov. (Pl. XXII. fig. 1).

Antennae greyish fuscous, with faint paler annulations, the basal joint hoary. Palpi, Head and Thorax hoary white, sprinkled with fuscous. Forewings hoary white, sprinkled and spotted with greyish fuscous, the base of the costa slightly suffused; in some specimens the fuscous spotting indicates two discal spots with a plical spot below and between them, also one or two others beyond the end of the cell, but in other specimens these are more or less obliterated by coalescence; cilia hoary white, shaded with fuscous along their basal half which shows a tendency to division into two spots, but these are not clearly defined. Exp. al. 9—10 mm. Hindwings pale grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen hoary whitish, shaded with fuscous. Legs whitish, the tarsi speckled with fuscous.

Type ♂ (26313); ♀ (26148) *Molokai*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894.—OAHU: Waianae Mts., above 1600 ft., (7) iv. 1892; Mt. Kaala, 1500 ft., (1) iii. 1892.—MOLOKAI: 3000 to above 4000 ft., (3) 30. v.—vi. 1893, (2) 6—16. ix. 1893.—HAWAII: Kona, 5000 ft., (1) 30. vi. 1892. Fifteen specimens.



**241.** (105) *Hyposmocoma schismatica*, sp. nov. (Pl. XXII. fig. 2).

Antennae dark fuscous. Palpi dark fuscous, sprinkled with whitish ochreous, especially on their inner sides. Head light ochreous, the face even paler. Thorax dark fuscous, tegulae edged with pale ochreous. Forewings dark fuscous, slightly speckled with whitish ochreous, a broad dorsal streak, varying from light ochreous to whitish ochreous, is sometimes traceable to the base, but more usually cut off somewhat abruptly at the flexus; it throws up a slight excrescence before the dark plical spot, this and the discal spots above it being always more or less apparent; a small ochreous spot lies on the costa at four-fifths, and an opposite one on the dorsum terminating the dorsal streak; a few pale scales around the termen at the base of the greyish fuscous cilia, which become paler on the dorsum, but do not take the colour of the dorsal streak. Exp. al. 11—13 mm. Hindwings grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen fuscous. Legs brownish grey, faintly speckled.

Type ♂ (27600); ♀ (27965) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Thirteen specimens.

This species varies in the tint of the pale dorsal streak, which is sometimes almost whitish, sometimes distinctly ochreous. It differs from *metrosiderella* in the absence of the subcostal hair-pencil and from *modesta* in the uneven edge of the dorsal streak and in the more speckled appearance of the darker portions of the wing; the face is however always pale, whereas in *modesta* it is if anything darker than the crown.

**242.** (106) *Hyposmocoma cinereosparsa*, sp. nov. (Pl. XXII. fig. 3).

Antennae fuscous, faintly annulate. Palpi fuscous, sprinkled with whitish cinereous, a ring of the same around the apex of the median joint. Head whitish cinereous, sprinkled with fuscous above; face whitish cinereous. Thorax fuscous, tegulae sprinkled with whitish cinereous. Forewings fuscous, profusely sprinkled with whitish cinereous scales which are somewhat concentrated along the dorsum and below the outer end of the cell, also on the costa at the commencement of the cilia; a plical and two discal dark fuscous spots are visible, the second discal being at the end of the cell; cilia brownish grey above the tornus, mixed fuscous and whitish cinereous tipped with brownish grey about the termen and apex. Exp. al. 13—14 mm. Hindwings grey, cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs brownish grey, the tarsi banded with fuscous and spotted with whitish cinereous at the joints.

Type ♂ (27104); ♀ (26883) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (17) VI. 1894. Eighteen specimens.

**243.** (107) *Hyposmocoma saccothora*, sp. nov. (Pl. XXII. fig. 4).

Antennae brown; the basal joint enlarged outwardly, with a pale yellowish cinereous ring around its apex. Palpi pale cinereous, blotched with brown externally. Head dark brown; face shining, dark brownish grey. Thorax dark brown. Forewings dark brown (through the very dense sprinkling of dark scales on a pale cinereous ground), with an indication of two slightly darker fuscous spots on the fold, one before and one behind its middle, a very small dark spot lying also at the end of the cell; the outer third of the costa to the apex is very narrowly pale yellowish cinereous and a few scales of the same colour are visible on the opposite margin at the base of the tornal cilia (in some specimens these spots are connected by a sprinkling of whitish cinereous scales); cilia dark brown, with a slightly speckled appearance. Exp. al. 8—10 mm. Hindwings brownish grey; cilia brownish; ♂ without subcostal hair-pencil. Abdomen brown. Legs pale cinereous, the tarsi banded with greyish brown.

Type ♀ (25062); ♂ (25904) *Oahu*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894.—OAHU: Waianae Mts., (3) iv. 1892; near head of Kawaihoa Gulch, larva in case on lichen-stained rock, (3) excl. iv. 1893; Mt. Kaala, 3000 ft., larva in case on almost bare rock, no doubt lichenivorous, (1) excl. iv. 1892.—MOLOKAI: above 3000 ft., (1) 13. vi. 1893. Nine specimens.

The larval case is in the form of a somewhat stout thorn; whitish, mottled with greyish fuscous, and with a straight opening at the larger extremity, which is fitted with a lid, like the operculum of a univalve mollusc.

**244.** (108) *Hyposmocoma modesta*, sp. nov. (Pl. XXII. fig. 5).

Antennae fuscous. Palpi fuscous, with a pale ochreous ring around the apex of the median joint. Head fuscous, with a slight fawn-ochreous tinge above; face fuscous. Thorax fuscous, tinged with fawn-ochreous. Forewings dark tawny fuscous, with a slight indication of two dark spots, one on the fold, the other at the end of the cell, the anterior discal spot can also be faintly traced; from the base a rather broad fawn-ochreous streak occupies the dorsal area beneath the fold and tapering outward terminates in a slight enlargement at the tornus; the greyish fuscous terminal cilia are also tinged along their base with ochreous and there is a small spot of the same colour in the commencement of the costal cilia. Exp. al. 12 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish fuscous, tinged with ochreous posteriorly. Legs brownish fuscous, with some obscure pale ochreous tarsal spots.

Type ♂ (27022); ♀ (27014) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (8) vi. 1894; Halemanu, 4000 ft., (1) v. 1895. Nine specimens.

This species differs from *schismatica* in the straight dorsal streak throwing up no uneven anterior edge and especially in the dark face and the distinct pale ring around the dark palpi. It differs from *metrosiderella* in the absence of the subcostal hair-pencil.

**245.** (109) *Hyposmocoma tomentosa*, sp. nov. (Pl. XXII. fig. 6).

Antennae whitish, barred with fuscous. Palpi white, the median joint much shaded and sprinkled with fuscous, the terminal joint sparsely sprinkled. Head white. Thorax white in the middle, greyish fuscous at the sides. Forewings greyish fuscous, profusely sprinkled with mealy white scales as far as the brownish grey cilia; a white dorsal streak from base to tornus. Exp. al. 14 mm. Hindwings grey; cilia brownish grey. Abdomen mealy white, tinged with grey posteriorly. Legs whitish, shaded and banded with grey.

Type ♀ (25379) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895; Kona, 3000 ft., IX. 1892. Two specimens.

**246.** (110) *Hyposmocoma dorsella*, sp. nov. (Pl. XXII. fig. 7).

Antennae umber-brown. Palpi brownish fuscous externally, whitish ochreous on the inner side of the median joint and around its apex; the terminal joint also sprinkled with whitish ochreous. Head and Thorax whitish ochreous; tegulae shaded with brownish fuscous. Forewings whitish ochreous, shaded, except in a broad band along the dorsum, with brownish fuscous, in which are clearly distinguishable an elongate plical spot on the middle of the fold, a longer discal spot or streak above and beyond it and a transverse spot at the end of the cell; these are much darker in colour than the wing-shading, a few dark spots along the base of the cilia on either side of the apex; cilia whitish ochreous. Exp. al. 17 mm. Hindwings pale stone-grey; cilia pale ochreous; ♂ without subcostal hair-pencil. Abdomen brownish ochreous, more distinctly in patches on the anterior segments. Legs whitish ochreous, shaded and banded with pale brownish fuscous.

Type ♂ (25109) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft., IV. 1892. Unique.

**247.** (111) *Hyposmocoma fallacella*, sp. nov. (Pl. XXII. fig. 8).

Antennae greyish brown. Palpi greyish white, with a fuscous shade on the basal half of the median joint externally and a spot at the base of the terminal joint. Head and Thorax dull whitish; tegulae brownish grey. Forewings greyish brown, with a pale whitish ochreous streak along the dorsum, including the terminal cilia nearly to the apex. Exp. al. 16 mm. Hindwings pale greyish; cilia brownish grey; ♂ with expansible

greyish subcostal hair-pencil. Abdomen dull greyish. Legs whitish cinereous, the tarsi slightly grey-shaded.

Type ♂ (27065) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

**248.** (112) *Hyposmocoma falsimella*, sp. nov. (Pl. XXII. fig. 9).

Antennae bronzy brown. Palpi bronzy brownish, inclining to pale brassy ochreous on their inner sides and externally at the junction of the median and terminal joints. Head pale brassy ochreous. Thorax bronzy brown. Forewings bronzy brown, with a pale brassy ochreous dorsal streak from base to tornus, influencing the tornal but not the apical cilia; with three subovate dark brown spots, one on the middle of the fold, one a little beyond it on the disc, and one at the end of the cell. Exp. al. 18 mm. Hindwings very pale greyish; cilia pale brownish ochreous; ♂ without subcostal hair-pencil. Abdomen and Legs pale brownish grey, the tarsi slightly darker externally.

Type ♂ (26648) Mus. Wlsm.

HAB. MAUI: Haleakala, above 5000 ft., III. 1894. Unique.

This species, which bears a strong resemblance to *Monopis imella*, Hb., is closely allied to *fallacella*, from which it differs essentially in lacking the subcostal hair-pencil and in its darker palpi.

**249.** (113) *Hyposmocoma ochreovittella*, sp. nov. (Pl. XII. fig. 10).

Antennae tawny brownish, faintly annulate with pale ochreous. Palpi pale cinereous, shaded, especially on the terminal joint, which is longer than the median, with tawny brownish. Head tawny brownish; face pale ochreous. Thorax pale brownish ochreous. Forewings tawny brownish, faintly mottled with pale ochreous, the whole space beneath the fold pale brownish ochreous; this colour, slightly crossing the fold beyond and before its middle, defines the outer edges of two rather dark plical spots; a spot at the end of the cell and another discal spot preceding it are faintly indicated in a darker shade of the ground-colour; cilia brownish ochreous, shading to greyish brown. Exp. al. 16—18 mm. Hindwings pale grey; cilia slightly paler; ♂ without subcostal hair-pencil, but with a strong outstanding pale brownish ochreous hair-pencil arising from the limbus near the base. Abdomen brownish. Legs brownish ochreous, hind tarsi with darker spots.

Type ♂ (25492); ♀ (25619) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., VI.—VIII., IX. 1892. Twelve specimens.

The limbal hair-pencil arises on the upper side of the wing but is sometimes folded underneath; this structure does not occur in *fulvida*, *quadripunctata* and *vicina*, three allied species, which it is difficult otherwise to distinguish from *ochreovittella*.

**250.** (114) *Hyposmocoma quadripunctata*, sp. nov. (Pl. XXII. fig. 11).

Antennae tawny brownish. Palpi tawny brown, the terminal joint and a spot at the apex of the median joint inclining to ochreous, especially on the upper side. Head and Thorax tawny brown. Forewings tawny brown, with a vinous gloss, inclining to fade to brownish ochreous along the dorsum; a dark fuscous spot in the fold beyond its middle is followed by a smaller one a little above the fold; between and above these is one on the cell followed by a fourth at the end of the cell—all these are more or less annulate with pale brownish ochreous; cilia tawny brown, faintly streaked with pale brownish ochreous. Exp. al. 19 mm. Hindwings shining, pale grey; cilia brownish cinereous; ♂ without subcostal hair-pencil. Abdomen brownish cinereous. Legs brownish cinereous, tarsi with pale spots at the joints.

Type ♂ (26937); ♀ (26922) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894. Two specimens.

**251.** (115) *Hyposmocoma sudorella*, sp. nov. (Pl. XXII. fig. 12).

Antennae greyish brown. Palpi greyish brown, the terminal joint narrowly ochreous above. Head and Thorax tawny brown. Forewings tawny brown, with a smooth glossy appearance; a tawny fuscous spot, a little beyond the middle of the fold, is followed by an obliquely reduplicated spot on the cell above it, with another on the end of the cell; cilia greyish brown. Exp. al. 18 mm. Hindwings shining, whitish grey; cilia greyish brown; ♂ without subcostal hair-pencil. Abdomen greyish brown. Legs pale greyish brown.

Type ♂ (26923) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895; Mts., 3000—4000 ft., v.—vi. 1894. Three specimens.

This species has slightly broader hindwings than *fulvida* and is a little larger, but it approaches very closely in appearance to some varieties of that species.

**252.** (116) *Hyposmocoma vicina*, sp. nov. (Pl. XXII. fig. 13).

Antennae fuscous, the basal joint with an ochreous ring at its apex. Palpi fuscous, but tinged with pale ochreous to beyond the middle of the median joint externally; the inner side of the median joint also tinged with ochreous throughout. Head and Thorax tawny fuscous, an ochreous tinge on the latter posteriorly; face dull ochreous. Forewings dark tawny fuscous, mottled with ochreous along the fold and across the middle of the wing, two opposite marginal spots faintly indicated beyond the end of the cell, which is occupied by a round faintly ocellate spot; cilia ochreous, much shaded with fuscous nearly to their extremities. Exp. al. 14—15 mm. Hindwings shining, pale brownish

grey, slightly darker towards the apex; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen greyish fuscous, with paler transverse bands posteriorly. Legs brownish cinereous, the tarsi broadly annulate with tawny fuscous.

Type ♂ (25052); ♀ (25053) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 1700 ft.: on trunks of more or less decayed koa trees (*Acacia koa*), IV. 1892; near head of Kawailoa Gulch, (1) IV. 1893. Nine specimens.

This species can be distinguished from *fulvida* by the paler median joint of the palpi, which in the latter have not the same pale ochreous tinge; moreover there is much more yellow-ochreous mottling on the wing-surface than in *fulvida*. The whole series of specimens from the same locality agree in these respects, but a single specimen might possibly have been regarded as a mere variety.

**253.** (117) *Hyposmocoma fulvida*, sp. nov. (Pl. XXII. fig. 14).

Antennae tawny brown; basal joint with a pale spot at its apex. Palpi tawny brown, with a pale spot at the apex of the median joint. Head and Thorax tawny brown. Forewings tawny brown, with three somewhat obscurely indicated dark tawny fuscous spots, one on the middle of the fold, one on the cell a little beyond and above it, and a third at the end of the cell, with a faint indication of a smaller spot a little above the fold at one-third from the base; cilia tawny brown, tending to greyish brown about the tornus. Exp. al. 14—16 mm. Hindwings brownish grey; cilia pale greyish brown; ♂ without subcostal hair-pencil. Abdomen tawny brown. Legs tawny brownish, with pale spurs and indistinct tarsal spots.

Type ♂ (26117); ♀ (26277) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: above 3000 to about 4000 ft., (3) 9—13. VI. 1893.—KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (14) V.—VI. 1894. Eighteen specimens.

This species has thinner palpi and thicker hind tarsi than *vicina*.

**254.** (118) *Hyposmocoma sideritis*, sp. nov. (Pl. XXII. fig. 15).

Antennae fuscous, with faint brownish ochreous annulations. Palpi cinereous, shaded externally with fuscous, a ring of the same near the end of the median joint. Head tawny brown; face pale cinereous. Thorax tawny brown. Forewings tawny brown, with a slight bronzy gloss; cilia smoky brownish grey. Exp. al. 14 mm. Hindwings and cilia brownish grey; ♂ with brownish ochreous subcostal hair-pencil. Abdomen smoky grey. Legs brownish ochreous, with smoky grey hairs on the hind tibiae.

Type ♀ (28545); ♂ (26628) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., IV. 1894, V. 1896. Two specimens.

**255.** (119) *Hyposmocoma obscura*, sp. nov. (Pl. XXII. fig. 16).

Antennae brown, a pale ochreous spot at the end of the basal joint. Palpi, apical joint as long as the median, bronzy brown, the median joint with strongly iridescent scales externally. Head and Thorax dark bronzy brown. Forewings bronzy brown, apparently without markings, but on close examination a minute darker spot is visible on the middle of the fold with a few pale brownish ochreous scales at its outer extremity; above and a little beyond this is a similar darkened spot on the cell from which a slender line of pale brownish ochreous scales runs to a third spot at the end of the cell (these scales are probably very fugitive, as they have almost entirely disappeared from the right wing of 26668); cilia bronzy brown, slightly paler than the wing. Exp. al. 14—18 mm. Hindwings shining, brownish grey; cilia pale bronzy brownish; ♂ without subcostal hair-pencil. Abdomen greyish brown. Legs bronzy brownish, the hind tibiae iridescent at their sides, hairy above, pale cinereous at their extremities; the hind tarsi faintly spotted with pale cinereous.

Type ♀ (26668); ♂ (26676) Mus. Wlsm.

HAB. MAUI: Haleakala, 4000—5000 ft., III. 1894, v. 1896; Olinda (Haleakala), 4000 ft., IV. 1894, v. 1896. Seven specimens.

In paler specimens the spots are more distinct.

**256.** (120) *Hyposmocoma scandens*, sp. nov. (Pl. XXII. fig. 17).

Antennae dark brownish cinereous, a small pale spot at the end of the browner basal joint. Palpi greyish fuscous, paler greyish on their inner sides. Head and Thorax cinereous, mixed with dark brown scales. Forewings dark bronzy brown, a fuscous shade at the base of the dorsum; with four dark fuscous spots, one on the disc about the middle, coalescing with one which precedes it on the fold, one at the end of the cell and another half-way between this and the discal spot on the upper edge of the fold; a few whitish scales on the disc and on the fold between the discal and plical spots; cilia obscurely streaked with pale ochreous and bronzy brown. Exp. al. 17—20 mm. Hindwings whitish grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen grey. Legs pale cinereous, the tarsi much shaded with fuscous.

Type ♂ (27084); ♀ (26715) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (5) v.—vi. 1894; Lihue, 4000 ft., (1) vii. 1896. Six specimens.

**257.** (121) *Hyposmocoma maestella*, sp. nov. (Pl. XXII. fig. 18).

Antennae brownish ochreous beneath, fuscous above. Palpi bronzy brownish externally, the terminal joint brownish fuscous. Head and Thorax brownish ochreous. Forewings rather shining, rich bronzy brown, with two dark fuscous discal spots, one about the middle of the wing, the other at the end of the cell, a few pale cinereous scales between them; a smaller fuscous spot below these on the upper edge of the fold is preceded by a larger one in the middle of the fold; cilia fuscous at the apex, alternating with fuscous and plain cinereous on the costa and termen. Exp. al. 21—25 mm. Hindwings shining, grey; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Legs greyish brown, with pale tarsal annulations.

Type ♂ (27583); ♀ (27648) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Twelve specimens.

**258.** (122) *Hyposmocoma fulvocervina*, sp. nov. (Pl. XXII. fig. 19).

Antennae pale ochreous. Palpi, terminal joint slightly longer than the median; blackish, pale ochreous at the end and on the inner side of the median joint. Head and Thorax purplish fawn. Forewings purplish fawn, with a narrow blackish spot on the middle of the fold, above and a little beyond which is another blackish spot followed by a larger one at the end of the cell; associated with these discal spots are some pale ochreous scales which sometimes almost surround them giving an ocellated appearance; three or four obscure greyish spots occur on the costa and termen; cilia fawn-ochreous. Exp. al. 17—21 mm. Hindwings shining, pale grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey; anal tuft ochreous. Legs whitish ochreous, with brownish tarsal and tibial shade-bands externally.

Type ♂ (27829); ♀ (27361) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (10) IV. 1895; Mts., 3000—4000 ft., (3) V. 1894, (4) VI. 1894. Seventeen specimens.

The peculiar coloration and ocellated discal spots renders this species easy of recognition.

**259.** (123) *Hyposmocoma carnea*, sp. nov. (Pl. XXII. fig. 20).

Antennae yellowish ochreous, annulate with fuscous. Palpi fuscous externally, pale on their inner sides, with a slight pale annulus around the apex of the median joint. Head and Thorax pale rosy fawn. Forewings pale rosy fawn, minutely speckled with pale fuscous (with a yellowish ochreous tint wherever the scales are slightly abraded); cilia pale rosy fawn. Exp. al. 19 mm. Hindwings shining, whitish stramineous; cilia pale rosy; ♂ without subcostal hair-pencil. Abdomen and Legs pale fawn-ochreous.



Type ♂ (26902) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v.—vi. 1894. Two specimens.

This species differs from *roseofulva* in its decidedly broader hindwings, in its shorter palpi and in its paler coloration.

**260.** (124) *Hyposmocoma roseofulva*, sp. nov. (Pl. XXII. fig. 21).

Antennae brownish ochreous, the basal joint with a fuscous streak above. Palpi pale ochreous, a fuscous line along the outer side of the median joint, and a slender fuscous line along the outer side of the terminal joint. Head and Thorax dark tawny, the latter shading to tawny fuscous posteriorly. Forewings rich reddish tawny, shading to tawny fuscous along the dorsum, the costal and terminal veins being faintly indicated by lines of tawny fuscous scales; a large tawny fuscous spot on the disc about the middle of the wing, more or less blending with the dark dorsal shade, is followed by a smaller spot at the end of the cell; cilia around the apex reddish tawny, with a broken tawny fuscous line along their base, tornal cilia pale cinereous. Exp. al. 17—19 mm. Hindwings shining, pale grey; cilia pale cinereous; ♂ without subcostal hair-pencil. Abdomen cinereous. Legs pale brownish cinereous.

Type ♂ (27081); ♀ (27209) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v.—vi. 1894. Twelve specimens.

**261.** (125) *Hyposmocoma subsericea*, sp. nov. (Pl. XXII. fig. 22).

Antennae pale fawn, shaded with brownish fuscous. Palpi very pale fawn-ochreous, a dark shade along the under side of the terminal joint. Head and Thorax pale fawn-ochreous. Forewings rather shining, pale fawn-ochreous, dusted with fuscous atoms; a blackish spot on the middle of the fold, another somewhat elongate above and a little beyond it, a third at the end of the cell; at the base are two small fuscous spots, one below the fold, the other on the costa, a third, smaller one, is indicated between these two but removed from the base; cilia a little paler than the wing, with a few faintly indicated dark shade-spots along their base around the apex and termen. Exp. al. 18—24 mm. Hindwings shining, pale greyish; cilia with a slight fawn-ochreous tinge; ♂ without subcostal hair-pencil. Abdomen pale ochreous. Legs very pale fawn-ochreous, the tarsal joints shaded above with fawn-brownish.

Type ♂ (26360) *Molokai*, Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., (1) v. 1895.—MOLOKAI: 4000 ft., (1) 23. ix. 1893.—LANAI: above 2000 ft., (1) xii. 1893.—HAWAII: Mt. Kilauea, (1) vi. 1895, (1) viii. 1896. Five specimens.

The species varies in size and in the amount of shading on the forewings being more or less distinctly indicated. One of the specimens from Hawaii (27406) has paler hindwings and the dark shade on the palpi is absent, but I cannot venture to separate it, having only one specimen in moderate condition. It is to be regretted that no series of specimens is available from any of the islands.

**262.** (126) *Hyposmocoma ochreocervina*, sp. nov. (Pl. XXII. fig. 23).

Antennae fawn-ochreous, the basal joint fuscous. Palpi fawn-ochreous, the median joint fuscous externally. Head and Thorax fawn-ochreous. Forewings fawn-ochreous, with a minute fuscous spot, a little above the fold, somewhat beyond its middle, a second minute spot at the end of the cell; above and below this the costal and dorsal margins show patches of fuscous scales, a few of the same being scattered along the termen and apex at the base of the pale fawn-ochreous cilia; at the extreme base of the costa is a narrow fuscous shade followed by another a little beyond it. Exp. al. 12—13 mm. Hindwings shining, pale grey; cilia with a slight brownish ochreous tinge; ♂ without subcostal hair-pencil. Abdomen cinereous. Legs pale cinereous, the tarsi with faint darker bands.

Type ♂ (25159); ♀ (25157) Mus. Wlsm.

HAB. OAHU: Waianae Mts., about 3000 ft., iv. 1892, "beaten from Lehua" trees (*Metrosideros polymorpha*?). Eight specimens.

**263.** (127) *Hyposmocoma syrrhaptes*, sp. nov. (Pl. XXII. fig. 24).

Antennae pale ochreous, barred above with brownish fuscous. Palpi pale ochreous, dark brownish fuscous externally on the median joint nearly to its apex. Head pale fawn-ochreous. Thorax fawn-ochreous. Forewings fawn-ochreous, with a broad dark brownish fuscous shade, along their upper third, extending from the base to the costal cilia and almost concealing a fuscous spot, at the end of the cell, as well as the preceding discal spot, but not extending to the fold; along the termen and reaching to the apex is a less distinct shade of the same colour, sometimes almost absent; cilia fawn-ochreous. Exp. al. 12 mm. Hindwings and cilia pale brownish fuscous; ♂ without subcostal hair-pencil. Abdomen fuscous. Legs pale brownish fuscous, with paler tarsal spots.

Type ♂ (27125); ♀ (27543) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v.—vi. 1893; Halemanu, 4000 ft., v. 1895. Four specimens.

**264.** (128) *Hyposmocoma paradoxa*, sp. nov. (Pl. XXII. fig. 25).

Antennae pale ochreous, barred above with brownish fuscous. Palpi pale ochreous, dark brownish fuscous externally on the median joint almost to its apex; terminal joint slightly sprinkled with fuscous, especially before its apex. Head pale fawn-ochreous. Thorax fawn-ochreous. Forewings fawn-ochreous, with a broad dark brownish fuscous shade along their upper third extending from the base to the apex, and to a distinct dark fuscous spot at the end of the cell preceded by another on the disc; the dark shade is slightly diffused beyond the cell, but sends down, before the middle, an angular projection to the position of the plical spot which is not otherwise distinguishable; the pale dorsal portion of the wing is obscurely irrorated with fuscous scales, the bases of the fawn-ochreous cilia as well as the cilia themselves being sometimes shaded with brownish fuscous. Exp. al. 11—12 mm. Hindwings and cilia pale leaden grey, with a brownish tinge outwardly; ♂ without subcostal hair-pencil. Abdomen fuscous. Legs pale brownish fuscous, with paler tarsal spots.

Type ♂ (27303); ♀ (27220) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894, (7) vi. 1894.—MOLOKAI: above 3000 ft., (3) 13. vi. 1893, (1) 6. ix. 1893. Twelve specimens.

In *syrrhaptēs* the dark costal shade reaches only to the two discal spots and to the costal cilia, while in *paradoxa* this shade reaches to the apex and throws down an angular projection to the plical spot. The palpi also differ slightly, but the two species are very closely allied.

**265.** (129) *Hyposmocoma mimema*, sp. nov. (Pl. XXII. fig. 26).

Antennae dark fuscous, a small ochreous ring at the end of the basal joint. Palpi pale ochreous, the median thickly, and the terminal joint slightly suffused with dark fuscous externally; a pale spot at the apex of the median joint. Head yellow-ochreous. Thorax blackish fuscous, an ochreous spot on the tegulae. Forewings bright yellowish ochreous, a blackish fuscous shade running from the base to the costal cilia, its lower edge biangulate, the angles reaching the disc but not to the fold; a sprinkling of fuscous scales about the apex, diffused inward towards the end of the cell, with a few also on the tornus at the end of the fold; without visible discal spots; cilia bright ochreous on the termen, tornal cilia brownish grey. Exp. al. 11 mm. Hindwings leaden grey; cilia brownish grey; ♂ with expansible dark grey subcostal hair-pencil. Abdomen dark brownish grey. Legs brownish grey, tarsi annulate with pale ochreous.

Type ♂ (28370) Mus. Wlsm.

HAB. MAUI: Haleakala, below 4000—5000 ft., v. 1896. Two specimens.

This species is almost exactly similar to *syrrhaptēs* in colour and markings but lacks the discoidal spot, while *syrrhaptēs* has no subcostal hair-pencil.

**266.** (130) *Hyposmocomma bella*, sp. nov. (Pl. XXII. fig. 27).

Antennae cinereous, annulate with fuscous. Palpi (broken). Head leaden grey; face paler. Thorax dark purplish grey. Forewings dark purplish grey, with a bright yellow dorsal streak from base to apex, including the terminal cilia, a small yellow spot on the middle of the costa and a larger one at the commencement of the costal cilia; the upper edge of the dorsal streak is biundulate, the first undulation reaching the fold before its middle, the second extending to the end of the cell; costal cilia purplish grey. Exp. al. 9 mm. Hindwings and cilia tawny brownish. Abdomen dark grey. Legs (missing).

Type ♂ (27982) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Unique.

The single specimen has no palpi and is in poor condition but is so remarkably distinct and beautiful in the contrast of its colours that I cannot refrain from describing it.

**267.** (131) *Hyposmocomma rusius*, sp. nov. (Pl. XXII. fig. 28).

Antennae fuscous. Palpi bright ochreous, terminal joint shaded with brownish fuscous. Head brownish fuscous; face whitish. Thorax bronzy brownish fuscous. Forewings bronzy brownish fuscous, with an indistinct ochreous gloss, especially noticeable from the middle of the base to half the wing-length, dilated upward to the middle of the costa and again in a broad band before the apex; the colours are so completely blended as to influence each other more or less throughout the wing and no distinct pattern can be recognised; a discal spot beyond the middle is almost obliterated, and another at the end of the cell is very minute; a few ochreous scales lie at the base of the dark bronzy fuscous cilia. Exp. al. 10 mm. Hindwings dark leaden grey; cilia tawny fuscous; ♂ without subcostal hair-pencil. Abdomen brownish fuscous. Legs bronzy grey, with obscure pale tarsal spots.

Type ♂ (26291) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 30. v. 1893. Unique.

**268.** (132) *Hyposmocomma auropurpurea*, sp. nov. (Pl. XXIII. fig. 1).

Antennae bronzy fuscous. Palpi bronzy golden, tipped with purplish. Head shining purple; face bronzy grey. Thorax shining purplish. Forewings shining purple, with a broad diffused bronzy golden streak running from the base along the fold, in which is a small dark spot, to the tornus and thence reverting obliquely outward to the costa before the apex; cilia purple. Exp. al. 9 mm. Hindwings and cilia rather

iridescent, dark bronzy fuscous; ♂ without subcostal hair-pencil. Abdomen purplish. Legs bronzy fuscous.

Type ♂ (25085); ♀ (25083) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 2000 ft., IV. 1892. Three specimens.

**269.** (133) *Hyposmocoma inversella*, sp. nov. (Pl. XXIII. fig. 2).

Antennae fuscous, the basal joint brownish ochreous. Palpi brownish ochreous; the terminal joint shorter than median. Head brilliant steel-blue above, brownish ochreous at the sides, the face pale ochreous. Thorax purplish; tegulae ochreous, touched with steel-blue at their base. Forewings shining purplish, with a small spot at the base of the costa and two transverse fasciae brownish ochreous; the first fascia leaves the costa at one-fifth from the base and is dilated to the dorsum, enclosing a purplish basal patch, which is slightly angulated outward a little above the fold; the second fascia is inverted from the commencement of the costal cilia, running obliquely to the commencement of the tornal cilia, its outer margin slightly concave; cilia cinereous. Exp. al. 11—12 mm. Hindwings and cilia tawny cupreous. Abdomen tawny fuscous. Legs tawny fuscous, with pale spurs and tarsal spots.

Type ♀ (25082) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 2000 ft., IV. 1892. Two specimens.

**270.** (134) *Hyposmocoma vinicolor*, sp. nov. (Pl. XXIII. fig. 3).

Antennae reddish fuscous. Palpi cinereous, shaded and speckled with reddish fuscous externally. Head pale cinereous, with a few reddish fuscous scales. Thorax cinereous, dusted with reddish fuscous. Forewings whitish cinereous, profusely sprinkled with dark tawny scales, giving the appearance of a vinous suffusion; these are aggregated in a conspicuous dark tawny basal patch, somewhat convex outwardly, in a dark tawny patch resting on the fold beyond its middle and diffused upward and inward across the cell nearly to the costa, also in a small spot at the end of the cell; cilia brownish grey, sprinkled with tawny scales about their base, especially around the apex. Exp. al. 15 mm. Hindwings and cilia pale greyish brown. Abdomen dark greyish brown above, whitish beneath. Legs pale cinereous, somewhat dusted with tawny grey.

Type ♀ (25047) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft., IV. 1892. Two specimens.

**271.** (135) *Hyposmocoma adelphella*, sp. nov. (Pl. XXIII. fig. 4).

Antennae brown. Palpi brown, terminal joint paler than median. Head whitish ochreous, shaded above with brown. Thorax fawn-brown. Forewings fawn-brown, with the usual two dark discal spots, the first slightly elongate a little beyond the similar

plical spot below it; cilia pale brown, a faint ochreous line running along their base. Exp. al. 14 mm. Hindwings pale brownish grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen and Legs brownish grey; hind tarsi faintly pale-spotted.

Type ♂ (25424); ♀ (25709) *Hawaii*, Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (2) 17. VII. 1892.—KAUAI: Mts., 3000—4000 ft., (1) VI. 1894.

I am unable to separate from the Hawaiian species a single ♀ (27124) from Kauai.

**272.** (136) *Hyposmocoma metrosiderella*, sp. nov. (Pl. XXIII. fig. 5).

Antennae bronzy fuscous. Palpi blackish, with a pale ochreous ring around the apex of the median joint; terminal joint sprinkled with pale ochreous scales. Head and Thorax brownish cinereous. Forewings bronzy fuscous, the dorsal space below the fold, a spot at the lower angle of the cell, and another on the costa before the apex pale brownish ochreous, many scales of the same colour scattered about the wing-surface; on the dark suffused portion of the wing dark fuscous spots are ill-defined, these appear to be placed thus:—one overlapping the fold at one-third of its length, one in the fold at two-thirds of its length, one at the end of the cell, and one, before it on the cell, a little further from the base than the plical spot below it; cilia dull greyish ochreous. Exp. al. 11—13 mm. Hindwings brownish grey; cilia greyish ochreous; subcostal tuft of the ♂ leaden grey. Abdomen dull brownish ochreous. Legs dark tawny greyish, with whitish ochreous annulations at the joints.

Type ♂ (27972); ♀ (27974) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Halemanu and Kaholuamano, 4000 ft., larva on *Metrosideros*, (8) excl. v. 1895; Mts., 3000—4000 ft., (2) v.—vi. 1894.—OAHU: Waianae Mts., (9) IV. 1892. Twenty-two specimens.

Varieties of this species occur in which there is less speckling and mottling, the darker spots being scarcely traceable, the dorsal space clearer, with a pale tornal spot opposite to that on the costa, and the abdomen of the ♂ appears to be also sometimes dark leaden grey above.

The larva feeds on *Metrosideros* (*polymorpha*?) in a rough case of frass with a loose lip. The case is somewhat flattened, pouch-shaped, with a short obtuse curved attenuation posteriorly, the middle is widened and the whole case is of a dull dark brownish and fuscous colour.

*Hyposmocoma*, sp. (*metrosiderella*?).

HAB. MAUI: Haleakala, 5000 ft., III. 1894.

A single specimen from Maui (26596) is not sufficiently distinct from *metrosiderella* to warrant description.

**273.** (137) *Hyposmocoma similis*, sp. nov. (Pl. XXIII. fig. 6).

Antennae pale fuscous ; basal joint pectinate. Palpi recurved to above the vertex, terminal joint as long as median ; median joint blackish, sprinkled with whitish scales, a white ring around its apex ; terminal joint creamy whitish, sprinkled with black. Head white, shaded with fuscous above in the middle. Thorax fuscous, whitish across the anterior margin. Forewings white, as to their ground-colour, but the whole surface above the fold suffused with fuscous, rendering the markings, which are as in *calva*, much less clearly defined than in that species ; the cilia have a very slight ochreous tinge. Exp. al. 16 mm. Hindwings bronzy grey ; the cilia with a scarcely perceptible ochreous tinge ; ♂ with a greyish subcostal hair-pencil. Abdomen grey, anal extremity whitish cinereous (not ochreous). Legs whitish, sprinkled with grey.

Type ♂ (25238) Mus. Wlsm.

HAB. HAWAII : Kona, 4000 ft., (1) VII. 1892, (1) 12. VIII. 1892, (1) 17. VIII. 1892. Three specimens.

This species greatly resembles *calva* but the colour of the head at once separates it, accompanied as this is by the other slight differences mentioned, especially the absence of any distinct yellowish ochreous tint in the cilia of the fore and hindwings.

**274.** (138) *Hyposmocoma calva*, sp. nov. (Pl. XXIII. fig. 7).

Antennae pale fuscous. Palpi, median joint blackish, sprinkled with whitish scales, a white ring around its apex ; terminal joint creamy whitish, sprinkled with black. Head pale ochreous. Thorax fuscous. Forewings white, much sprinkled and blotched with fuscous, of which an outwardly angulated basal patch becomes almost confluent with a profuse subcostal sprinkling, and a large ill-defined plical spot, about the middle of the fold, becomes almost confluent with a discal spot above and beyond it, which again is followed by another at the end of the cell, the apex also is clouded with fuscous ; the dorsal space below the fold is white, on which only a small portion of the basal patch, a portion of the plical spot, and a few anteternal fuscous scales encroach ; cilia greyish ochreous, slightly speckled with fuscous. Exp. al. 17 mm. Hindwings bronzy grey, paler at the base ; cilia greyish, with an ochreous tinge ; ♂ with greyish subcostal hair-pencil. Abdomen fuscous, anal segments ochreous. Legs whitish ochreous, sprinkled with grey.

Type ♂ (25227) Mus. Wlsm.

HAB. HAWAII : Kona, 4000 ft., 12—17. VIII. 1892. Two specimens.

**275.** (139) *Hyposmocomma tarsimaculata*, sp. nov. (Pl. XXIII. fig. 8).

Antennae dark fuscous, the basal joint with a few white scales at its apex. Palpi black, the end of the median joint white; terminal joint sprinkled with white. Head whitish, shaded with brownish fuscous above. Thorax black, sprinkled with white posteriorly, the tegulae tipped with ochreous. Forewings white, much sprinkled and suffused with black; an oblique black basal patch, wider on the dorsum than on the costa, communicates with a blackish dorsal shade which extends to the tornus where it meets a transverse black fascia, sprinkled and diffused on its inner margin, but clearly defined by a white band externally; at about one-third from the base is a black costal shade, attenuate obliquely downward to the fold, thence produced outward in an elongate reniform spot crossing the fold; before the apex is a black transverse shade, formed of thickly sprinkled scales which extend also through the white terminal cilia; tornal cilia brownish grey. Exp. al. 16—17 mm. Hindwings shining, pale grey; cilia brownish grey; ♂ with a blackish subcostal hair-pencil. Abdomen brownish grey. Legs white, tarsi with four black bands above, tibiae shaded with black externally; hind tibiae with long brownish grey hairs above.

Type ♂ (27321) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (3) VI. 1894.—OAHU: Near head of Kawaiiloa Gulch, (1) IV. 1893. Four specimens—those from Kauai are all males, the Oahu specimen is a ♀.

**276.** (140) *Hyposmocomma ochreociliata*, sp. nov. (Pl. XXIII. fig. 9).

Antennae pale cinereous, banded above with olive-grey. Palpi fuscous, much sprinkled with whitish scales, the apex of the median joint whitish. Head whitish, sprinkled with greyish fuscous. Thorax bright orange-ochreous, sprinkled and suffused with fuscous anteriorly. Forewings slaty whitish, much suffused above the dorsum, beyond the basal third, with olivaceous fuscous extending to the costa and apex; a basal patch of the same colour, containing some slightly raised scales, is irregularly edged externally with dark coppery fuscous, angulated on the fold and with some orange-ochreous scales along its dorsal margin; at the commencement of the fuscous suffusion is a large oblique patch of dark coppery fuscous, arising beneath the costa and slightly overlapping the fold, followed by a strong discal spot of the same colour, with another at the end of the cell, a tornal spot a little beyond the latter; the marginal spots before the apex are faintly indicated in the whitish ground-colour, the cilia throughout being bright orange-ochreous, sparsely speckled with greyish fuscous. Exp. al. 18 mm. Hindwings shining, grey; cilia orange-ochreous, shading to greyish about the tornus; subcostal hair-pencil rather dark grey. Abdomen dark greyish. Legs greyish, with ochreous annulations and tibial hair-scales.



Type ♂ (28748); ♀ (28747) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Two specimens.

This species is readily recognised by the very strong orange-ochreous cilia which in *calva* are only slightly tinged; the ochreous thorax also distinguishes it from that species.

**277.** (141) *Hyposmocoma malornata*, sp. nov. (Pl. XXIII. fig. 10).

Antennae slightly serrate, dark umber-brown; the basal joint with a narrow sub-ochreous ring around its outer extremity. Palpi dark umber-brown, with a narrow subochreous ring around the outer extremity of the median joint and a slight sprinkling of subochreous scales on the upper side of the terminal joint. Head and Thorax dark umber-brown. Forewings dark umber-brown, inclining to fuscous, very sparsely sprinkled with pale subochreous scales, a small patch of these forming a discal spot at about one-sixth from the base, obliquely diffused outward towards a smaller spot on the lower edge of the fold; a little before the apex are two opposite pale ochreous spots, on the costa and tornus respectively; cilia brownish fuscous, becoming brownish grey on their outer half and about the tornus. Exp. al. 14 mm. Hindwings leaden grey; cilia brownish grey; ♂ with a brownish fuscous subcostal hair-pencil. Abdomen brownish fuscous above, whitish ochreous beneath; the anal tuft pale ochreous. Legs dark brownish fuscous, the spurs and five tarsal annulations pale ochreous.

Type ♂ (26653) *Maui*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (3) IV. 1895; Halemanu, 4000 ft., (1) V. 1895; Mts., 3000—4000 ft., (4) VI. 1894.—MOLOKAI: above 3000—4000 ft., (18) 30. V.—13. VI. 1893; about 5000 ft., (1) 13. IX. 1893; above 3000 ft., (1) 16. IX. 1893.—MAUI: Olinda (Haleakala), 4000 ft., (1) IV. 1894.—HAWAII: Oloa, (1) IX. 1896. Thirty specimens.

**278.** (142) *Hyposmocoma quinquemaculata*, sp. nov. (Pl. XXIII. fig. 11).

Antennae whitish cinereous, spotted above with fuscous, the basal joint fuscous above. Palpi whitish cinereous, profusely speckled on the median joint, except at its apex, and shaded on the terminal joint with fuscous. Head and face whitish cinereous. Thorax whitish cinereous, sprinkled with fuscous. Forewings whitish cinereous, sprinkled with fuscous, with five conspicuous fuscous spots; one near the base of the fold, reniform; another, also placed in the fold, beyond its middle; a third resting on the outer end of the fold; the two latter almost connected with two discal spots above them, one at the end of the cell and one a little before it; a spot at the base of the costa and a triangular costal mark at about one-third from the base are somewhat faintly indicated,

followed by a whitish spot at the commencement of the costal cilia; cilia pale brownish cinereous, slightly speckled with fuscous. Exp. al. 15—16 mm. Hindwings brownish grey; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Abdomen dark greyish, anal tuft ochreous. Legs fuscous, whitish ochreous at the joints.

Type ♂ (28505); ♀ (25703) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., VI. 1892, 13. VIII. 1892, 8. IX. 1892. Three specimens.

Allied to *conditella* but distinguished by the absence of the hair-pencil in the hindwings.

**279.** (143) *Hyposmocoma conditella*, sp. nov. (Pl. XXIII. fig. 12).

Antennae greyish fuscous, the basal joint speckled with pale ochreous. Palpi olive-grey, shaded and speckled with greyish fuscous. Head greyish fuscous, inclining to ochreous at the sides. Thorax greyish fuscous, speckled with pale ochreous. Forewings greenish olivaceous, blotched and speckled with greyish fuscous throughout, with an admixture of a few pale ochreous scales; a pale ochreous costal spot before the apex, with an indistinct smaller one on the opposite margin; the darker patches are ill-defined but distributed approximately thus—one from the costa near the base, crossing the fold obliquely outward; one from the costa at one-third, reaching obliquely outward to the dorsum, but somewhat interrupted above the fold; a spot on the disc in the middle of the wing, followed by another at the end of the cell from which a diffused and dilated shade extends to the tornus; this is followed by an angular ante-apical shade arising from the extremities of the two pale marginal spots: cilia greyish, speckled with greyish fuscous. Exp. al. 15—16 mm. Hindwings brownish grey; cilia pale brownish grey; ♂ with fuscous subcostal hair-pencil. Abdomen brownish grey. Legs greyish olivaceous, with whitish tarsal spots, spurs and tibial hairs.

Type ♂ (26890) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Five specimens.

**280.** (144) *Hyposmocoma montivolans*, Btl. (Pl. XXIII. fig. 13).

*Laverna parva*? Btl. + *montivolans*, Btl., Tr. Ent. Soc. Lond. 1882, 44, No. 17 (1882)<sup>1</sup>.

Antennae delicately banded with greyish fuscous and pale ochreous; basal joint greyish fuscous. Palpi reaching more than the length of the head beyond and above it; median joint somewhat stout, smooth; apical joint as long as the median but more slender, smooth; pale olive-green, speckled with greyish fuscous. Head and Thorax olive-green, sprinkled with greyish fuscous. Forewings olive-green, sprinkled with

greyish fuscous ; a dark greyish costal shade beyond the middle is followed by a few rather ochreous scales at the commencement of the costal cilia ; a narrow greyish fuscous terminal shade extends around the apex where it is followed by some ochreous scales at the base of the apical cilia ; a series of three brownish fuscous spots is situated on the cell, the outer one at the end of the cell being larger than the other two and about as far distant from the apex as the inner one is from the base ; nearer to the base is another spot of the same colour on the fold, diffused obliquely outward across it ; a larger spot lies about the middle of the fold, diffused obliquely outward to the dorsum, and a third is at the end of the fold near the tornus ; cilia greenish cinereous, sprinkled with greyish fuscous, inclining to ochreous about the tornus. Exp. al. 14 mm. Hindwings with a large expansible dark blue-grey subcostal hair-pencil ; cilia grey, with a brownish tinge. Abdomen brownish grey, with a green iridescence. Hind Legs (missing).

Type ♂ (162 : 81. 9) Mus. Br. [Caenotype ♂ (25142) Mus. Wlsm.]

HAB. OAHU : Mts., near Honolulu (Blackburn)<sup>1</sup> ; Waianae Mts., "cases on rocks, lichenivorous, excl. IV. 1892" one specimen (Perkins).

The larva feeds on lichens on rocks, living in a silk-lined accumulation of frass, slightly pointed toward its anal extremity, the opening at the anterior end being large and straight.

**281.** (145) *Hyposmocoma iodes*, sp. nov. (Pl. XXIII. fig. 14).

Antennae dusky cinereous, the basal joint darkened. Palpi fuscous, the apex of the median joint whitish ; terminal joint whitish, sprinkled with fuscous. Head and Thorax dusky cinereous. Forewings dull whitish cinereous, profusely sprinkled and somewhat clouded with brownish grey ; with obscure rusty brownish markings consisting of an outwardly oblique basal patch, angulated to the dorsum below the fold, a slight subcostal cloud-spot at one-third, followed at equal distances by two discal spots, the outer one at the end of the cell ; below and before the first is a small patch on the fold, diffused downward to the dorsum, and below and beyond the second is a tornal patch at the end of the fold ; the usual ante-apical band is very indistinct ; cilia pale brownish cinereous. Exp. al. 13—14 mm. Hindwings and cilia brownish cinereous. Abdomen greyish fuscous above, whitish cinereous beneath. Legs whitish cinereous, tarsi faintly banded above.

Type ♂ (26321) ; ♀ (26144) Mus. Wlsm.

HAB. MOLOKAI : above 3000 ft., (3) 16. IX. 1893, (1) 5. VI. 1893 ; above 4000 ft., VI. 1893. Five specimens.

The species is nearly allied to *liturata*, but is distinguished by its duller ground-colour and somewhat more ferruginous markings, the position of the spots however, is about the same in both species and it is possibly only a geographical variation.

**282.** (146) *Hyposmocoma liturata*, sp. nov. (Pl. XXIII. fig. 15).

Antennae brownish fuscous. Palpi whitish ochreous, profusely sprinkled with fuscous. Head and Thorax brownish fuscous, sprinkled with pale ochreous, a band of the latter crossing the thorax posteriorly. Forewings, the ground-colour consists of an almost equal admixture of fuscous and whitish ochreous scales on which five dark fuscous spots are distinguishable; three discal, one at about one-third, one a little beyond the middle and one at the end of the cell; one plical, between the first and second discal; and one tornal, beyond the outer discal, this latter is bounded on either side by whitish ochreous scales, a conspicuous spot of the same being placed opposite to its outer margin; cilia brownish grey, minutely speckled with fuscous and whitish ochreous along their base. Exp. al. 10—12 mm. Hindwings leaden grey; cilia brownish grey; ♂ with a dark mouse-grey costal hair-pencil at the base. Abdomen leaden grey, anal tuft inclining to ochreous. Hind Legs greyish ochreous, the tarsi speckled with fuscous.

Type ♂ (25410) *Hawaii*, Mus. Wlsm.

HAB. MOLOKAI: above 4000 ft., (2) VI. 1893.—HAWAII: Kona, 4000 ft., (1) VII., (12) VIII.—IX. 1892; Olaa, (1) VII. 1895. Sixteen specimens.

The colour of the head and thorax appears to be variable, those varieties in which they are both quite pale reminding one of small specimens of *Endrosis lacteella*, Schiff.

The Molokai specimens, which are slightly paler, can only be regarded as varieties of this species.

**283.** (147) *Hyposmocoma mimica*, sp. nov. (Pl. XXIII. fig. 16).

Antennae whitish cinereous, barred with brown above. Palpi whitish cinereous, sprinkled with brownish fuscous externally. Head ochreous, more or less sprinkled with brownish fuscous (sometimes suffused). Thorax brownish fuscous; tegulae whitish cinereous (sometimes almost ochreous). Forewings whitish cinereous, sprinkled with brownish; a brownish basal patch, angulated outward on the fold; a brownish costal patch before the middle, diffused downward on to the cell; another diffused costal patch beyond the middle and much suffusion of brownish scaling along the dorsum about the tornus, and at the apex, leaving the pale ground-colour more conspicuous only in an oblique band near the base, a patch about the middle, and two opposite marginal spots before the apex; there is a large brownish fuscous spot about the middle of the fold, another above and beyond it on the cell, a third at the end of the cell, and a fourth indicated at the outer angle of the basal patch below the fold; cilia whitish cinereous, blending to brownish grey about the tornus. Exp. al. 9—11 mm. Hindwings purplish grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs brownish grey, the tarsi annulate with whitish.

Type ♂ (26224); ♀ (26155) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 30. v.—24. vi. 1893; 6—16. ix. 1893. Twenty-one specimens.

In some specimens the whitish ground-colour is almost completely suffused with brownish fuscous, the same general pattern of markings being traceable, but the cilia are also streaked and shaded with the darker colour. It approaches so nearly in appearance to *Hyposmocoma liturata*, in a parallel series of variations, that the separation of the species would be almost impossible without the character found only in the males.

**284.** (148) *Hyposmocoma parda*, Btl. (Pl. XXIII. fig. 17).

*Laverna parda* Btl., Ann. & Mag. NH. (5. s.) vii. 406, No. 49 (1881)<sup>1</sup>.

Antennae pale cinereous, annulate with dark fuscous; the basal joint blackish. Palpi dirty whitish, speckled and shaded with brownish black. Head dull ochreous, with dark grey speckling. Thorax fuscous, with some whitish ochreous specks. Forewings whitish, slightly olivaceous, much clouded and speckled with brownish black, leaving a pale costal spot at four-fifths, and a few specks on the termen at the base of the greyish cilia which have a darker shade on their basal half; two large blackish discal spots are preceded by a plical spot beneath them, and are more or less thrown into prominence by the pale ground-colour around them, which is only sparsely discernible on the remainder of the wing. Exp. al. 12—13 mm. Hindwings leaden grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen dark fuscous. Legs dirty whitish, shaded with dark fuscous externally, and spotted on the tarsi with the same.

Type ♀ (125: 81. 7) Mus. Br. [Caenotype ♂ (28478) *Maui*, Mus. Wlsm.]

HAB. MAUI: Haleakala, 4000 ft., "apparently connected with dead wood" (Blackburn)<sup>1</sup>; Olinda (Haleakala), 4000 ft., iv. 1894, v. 1896 (Perkins); Haleakala, 4000—5000 ft., v. 1896 (Perkins); [? Makawao (Blackburn)<sup>1</sup>].—HAWAII: Kona, 4000 ft. to above 4000 ft., vi.—viii. 1892, 2500 ft., ix. 1892 (Perkins); Hualalai (Kona), 5000 ft., 5. viii. 1892 (Perkins). Twenty-eight specimens.

Three specimens in the series (*Hualalai*, 25836—8) are probably mere varieties; these tend to exhibit more of the whitish ground-colour, especially along the middle of the wing, the discal spots being partially obliterated; the palpi also are whiter.

**285.** (149) *Hyposmocoma lixiviella*, sp. nov. (Pl. XXIII. fig. 18).

Antennae whitish ochreous, banded with dark brownish fuscous; basal joint dark brownish fuscous. Palpi whitish ochreous, the median joint shaded externally and the terminal joint shaded beneath with dark brownish fuscous. Head greyish fuscous; face

whitish ochreous. Thorax greyish fuscous, tegulae whitish ochreous, shaded at the base. Forewings whitish ochreous, profusely sprinkled with brownish fuscous and darker fuscous scales; an elongate fuscous spot at the base of the costa is followed by a small discal spot below its outer extremity; a large discal spot beyond the middle is preceded by one of equal size on the fold below it; some fuscous shading on the costa, at about two-thirds from the base, is diffused downwards and almost connected with a similar fuscous shade about the tornus, and beyond it is an outwardly angulated band of the pale ground-colour followed by a broken fuscous shade around the apex and termen; cilia whitish ochreous, with a brownish fuscous band along their base. Exp. al. 10—11 mm. Hindwings and cilia greyish brown; ♂ with a slight blackish subcostal hair-pencil. Abdomen fuscous. Legs whitish ochreous, shaded on the tibiae and banded on the tarsi externally with greyish fuscous.

Type ♀ (27293); ♂ (27027) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (2) v. 1894, (14) vi. 1894; Halemanu, 4000 ft., (1) v. 1895. Seventeen specimens.

*Hypsmocoma*, sp.

HAB. OAHU: Waianae Mts., 2000 ft., iv. 1892.

Four specimens in poor condition (25128—31) differ in the colour of the palpi and probably represent a closely allied species; but such material would not justify description.

**286.** (150) *Hypsmocoma saliaris*, sp.\*nov. (Pl. XXIII. fig. 19).

Antennae fuscous, with faint pale annulations. Palpi white, speckled with fuscous. Head hoary. Thorax dark fuscous, tegulae whitish. Forewings dark fuscous, or brownish black, with a dirty white streak along the dorsum having two angulated excrescences projecting into the dark ground-colour above it, this dorsal streak is not usually continued to the base; the costa shows some white speckling, especially in a costal spot at four-fifths; cilia blackish, with three or four whitish spots at their base, tornal cilia brownish grey. Exp. al. 10—11 mm. Hindwings and cilia brownish grey; ♂ without subcostal hair-pencil. Legs dirty whitish; hind tibiae with pale brownish grey hairs, tarsi fuscous spotted with white.

Type ♀ (25507); ♂ (25516) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., (1) vi. 1892, (3) 4. vii. 1892, (3) 12—17. viii. 1892; Mt. Kilauea, (1) vii. 1895. Eight specimens.

This species differs from *parda* in the development of a pale dorsal streak and in the obliteration of the discal and plical spots.

**287.** (151) *Hyposmocomma phalacra*, sp. nov. (Pl. XXIII. fig. 20).

Antennae tawny fuscous. Palpi, median joint tawny fuscous, with a cream-white spot at its apex; terminal joint entirely cream-white. Head cream colour. Thorax tawny fuscous. Forewings tawny fuscous, with a cream-white dorsal streak commencing near the base where it occupies the whole space beneath the fold, gradually attenuated to its termination at the tornus where it is somewhat tinged with ochreous, the tornal cilia corresponding in colour, the terminal cilia being tawny fuscous; a whitish spot on the middle of the costa is succeeded by a second spot, at the commencement of the costal cilia, which, like the extremity of the tornal streak, a little beyond it on the opposite margin, is tinged with ochreous. Exp. al. 9—10 mm. Hindwings grey; cilia brownish grey; ♂ with expansible blackish subcostal hair-pencil. Abdomen brownish. Legs tawny grey, spurs and tarsal spots cream-white.

Type ♀ (27252); ♂ (27033) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., (1) v. 1895; Mts., 3000—4000 ft., (4) vi. 1894. Five specimens.

**288.** (152) *Hyposmocomma pseudolita*, sp. nov. (Pl. XXIII. fig. 21).

Antennae tawny fuscous, a pale ochreous ring around the apex of the basal joint. Palpi tawny fuscous, whitish ochreous on their inner sides, a pale ochreous ring around the apex of the median joint. Head dusky cinereous. Thorax tawny fuscous, with two pale ochreous spots behind the middle. Forewings ochreous, thickly sprinkled and shaded with tawny fuscous which more or less obscures all the supraplical area, with the exception of two ochreous costal patches, one about the middle the other at the commencement of the costal cilia; opposite to the latter is an ochreous tornal spot; the dark tawny fuscous scales are concentrated in an ill-defined short basal patch, sharply angulated on the fold, in a plical spot beyond the middle, with a large discal spot above and a little beyond it, and in a smaller spot at the end of the cell; cilia profusely sprinkled with tawny fuscous, an ochreous streak running through them from the tornal spot. Exp. al. 8—9 mm. Hindwings pale grey; cilia pale brownish ochreous; ♂ with expansible blackish subcostal hair-pencil. Abdomen tawny fuscous. Legs pale ochreous, the tibiae shaded and the tarsi banded with tawny fuscous.

Type ♂ (26020) Oahu, Mus. Wlsm.

HAB. OAHU: Waianae Mts., (2) iv. 1892.—MOLOKAI: above 3000 ft., (1) 30. v. 1893.—HAWAII: Kona, 2000 ft., (1) ix. 1892. Four specimens.

**289.** (153) *Hyposmocoma irregularis*, sp. nov. (Pl. XXIII. fig. 22).

Antennae annulate with dark brown and pale ochreous ; the basal joint dark brown above, except at its extreme apex. Palpi dark brownish, a pale ochreous ring at the outer end of the median joint and a few pale ochreous scales about the middle of the terminal joint. Head, face, and tegulae pale ochreous, the middle of the Thorax mixed with brownish grey. Forewings pale ochreous, scaled and clouded with dark brownish fuscous, of which a broad triangular costal shade, broken a little beyond its middle, reaches a little below the fold ; another broad shade occupies the apical portion of the wing, overflowing the costal but not the terminal cilia ; the pale space between these shades is broken by a large roundish spot at the end of the cell ; at the base of the fold is another conspicuous dark brownish fuscous spot, expanding outward, but not crossing the pale ochreous band which separates the central shade from an oblique ill-defined basal patch ; cilia pale ochreous, with a few dark scales along their middle. Exp. al. 15 mm. Hindwings rather pale greyish ; cilia and subcostal hair-pencil greyish ochreous. Abdomen greyish ochreous. Legs brownish fuscous, with pale ochreous tarsal spots and hind tibial hairs.

Type ♂ (27037) Mus. Wlsm.

HAB. KAUAI : Mts., 3000—4000 ft., VI. 1894. Unique.

**290.** (154) *Hyposmocoma fervida*, sp. nov. (Pl. XXIII. fig. 23).

Antennae whitish, annulate with fuscous. Palpi fuscous, sprinkled with whitish, a whitish ochreous ring around the apex of the median joint. Head whitish. Thorax ochreous, with a greyish shade anteriorly. Forewings yellowish white, with a short black basal patch, its anterior half sprinkled with whitish ochreous, its outer edge slightly oblique, clearly defined ; a dark tawny fuscous V-shaped patch, terminating about the middle, crosses the fold at its lower angle, but does not reach the dorsum ; above the tornus is a smaller reniform patch of the same colour, the space between these, and above and beyond them to the costa and apex, being thickly bestrewn with greyish fuscous, leaving a clear whitish ochreous costal spot about the commencement of the cilia ; costal cilia greyish fuscous, terminal and tornal cilia ochreous, sparsely speckled with fuscous. Exp. al. 12—13 mm. Hindwings and cilia pale brownish grey. Abdomen brownish grey. Legs whitish ochreous, with four fuscous tarsal bands above, diminishing in width outward.

Type ♀ (26204) Mus. Wlsm.

HAB. MOLOKAI : Above 3000 ft., 5. VI. 1893. Three specimens.



**291.** (155) *Hyposmocoma torella*, sp. nov. (Pl. XXIII. fig. 24).

Antennae whitish ochreous, barred above with black. Palpi whitish ochreous, marked on the outer side with a patch of blackish scales on the middle of the median joint, and a spot at the terminal joint, with a blackish ring before its apex. Head pale ferruginous. Thorax brown. Forewings whitish ochreous, mixed with pale ferruginous, with three dark brown blotches in which is some admixture of blackish scales; a short straight pale ferruginous basal patch has some brown scales along the costa and on its outer edge, and a large mixed tuft of raised scales below the fold; it is succeeded by an oblique trapezoidal costal blotch before the middle, reaching a little over the fold, with a few raised scales at its outer extremity; a postmedian costal patch of the same colour, not reaching the tornus, is connected at its lower extremity with a smaller apical patch around which the ferruginous tinge extends over the cilia, except at the extreme apex. Exp. al. 12 mm. Hindwings leaden grey; cilia pale brownish grey; subcostal hair-pencil leaden grey. Abdomen dark leaden grey. Legs fuscous, the ends of the tibiae and tarsi banded with white.

Type ♂ (26058) Mus. Wlsm.

HAB. MOLOKAI: 12. VI. 1893. Unique.

**292.** (156) *Hyposmocoma arenella*, sp. nov. (Pl. XXIII. fig. 25).

Antennae pale ochreous, faintly banded above with fuscous; the basal joint blackish. Palpi pale ochreous, blackish along the outer side of the median joint nearly to its apex, a blackish spot below the extremity of the shorter terminal joint. Head pale ochreous. Thorax pale ochreous, shaded with fuscous. Forewings very pale ochreous, with three blackish costal spots, one small at the base, one large before the middle, and one smaller beyond the middle; two plical spots, one small near the base of the fold, the other large beyond the middle of the fold, and two discal spots, one at the end of the cell and one on the middle of the wing; these are all fairly distinct, but between and beyond them some scattered blackish scales lead up to a series of confluent blackish marginal spots, running around the apex and termen before the pale ochreous cilia, which are slightly shaded with fuscous. Exp. al. 14—16 mm. Hindwings elongate ovate, as wide as the forewings; greyish brown; cilia scarcely paler; ♂ without subcostal hair-pencil. Abdomen greyish brown. Legs whitish ochreous.

Type ♂ (25758); ♀ (25380) Mus. Wlsm.

HAB. HAWAII: Kona, 2000—5000 ft., VI.—VII. 1892, IX. 1892; Hualalai (Kona), 5000 ft., 5. VIII. 1892; Olaa, VI.—VII. 1895, IX. 1896, XI. 1896; Hilo, 2000 ft., I. 1896. Thirty-eight specimens.

In some varieties of the ♀ the costa and dorsum are shaded with dark tawny brown, the disc remaining pale and presenting a streaky appearance.

**293.** (157) *Hyposmocomma nebulifera*, sp. nov. (Pl. XXIII. fig. 26).

Antennae pale ochreous, distinctly banded above with dark brown. Palpi pale ochreous, the median joint shaded externally with dark brown nearly to its apex, the terminal joint shaded beneath its apex. Head and Thorax pale ochreous. Forewings pale ochreous, with a small dark brown spot at the base of the costa followed by two smaller ones on either side of the fold near the base; an oblique, ill-defined, dark brown costal shade, at about one-third from the base, tends slightly outward to the fold, where it terminates in a dark brownish fuscous spot, above and slightly beyond which is a similar spot on the cell also adjacent to the brown shade; a third spot lies at the end of the cell and the pale ground-colour above and beyond it, as well as somewhat below the fold, is bestrewn with brown scales, a series of confluent dentate spots occurring at the base of the pale ochreous costal and terminal cilia. Exp. al. 16—17 mm. Hindwings shining, pale straw-ochreous, with dull pale ochreous cilia; ♂ without subcostal hair-pencil. Abdomen and Legs pale ochreous; hind tibiae almost smooth.

Type ♀ (25134); ♂ (25136) *Oahu*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., 3000 ft., (4) IV. 1892 "beaten from dead boughs."—MAUI: Olinda (Haleakala), 4000 ft., (1) V. 1896. Five specimens.

Closely allied to *arenella* but differing in its paler hindwings and larger size.

**294.** (158) *Hyposmocomma rubescens*, sp. nov. (Pl. XXIII. fig. 27).

Antennae reddish fawn, faintly barred with tawny brown; basal joint tawny brown above. Palpi pale reddish fawn, the median joint dark tawny brown externally nearly to its apex, the terminal joint tipped with tawny brown. Head and Thorax pale reddish fawn, somewhat shaded with tawny brown. Forewings pale reddish fawn, blotched and spotted with dark tawny brown, which appears in a short basal patch, a costal shade at one-third from the base, attenuated on the cell, dilated to a dark spot on the fold, and thence diffused to the dorsum in an outwardly oblique course; a median spot on the cell is followed by another at its outer extremity, above which is a small costal shade; there is also an oblique subterminal shade, nearly parallel with a series of confluent terminal spots, which revert along the costa at the base of the cilia; cilia pale reddish fawn, slightly sprinkled with dark brown toward the apex. Exp. al. 14—18 mm. Hindwings pale leaden grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish ochreous. Legs very pale ochreous.

Type ♀ (27238); ♂ (26996) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Mts., 3000—4000 ft., V.—VI. 1894.—MAUI: Olinda (Haleakala), 4000 ft., (3) IV. 1894. Nineteen specimens.

The three females from Maui belong apparently to the same species.

**295.** (159) *Hyposmocoma scolopax*, sp. nov. (Pl. XXIII. fig. 28).

Antennae pale ochreous, banded with dark brown; basal joint dark brown, pale ochreous at its apex. Palpi pale ochreous, median joint externally with a dark brown band at its base and another at two-thirds of its length; terminal joint with a blackish ring at its base and a second before its apex. Head and Thorax fuscous, mixed with ochreous. Forewings pale ochreous, mottled with dark tawny brown; an angulated brown basal patch, followed by a half-fascia of the same colour before the middle, terminating slightly below the fold; a dark spot at the cell and another at the end of the cell forming part of a second half-fascia, dilated upward to the costa, almost confluent, at its lower extremity, with an apical shade extending downward to the tornus, with three or four extensions into the base of the pale ochreous cilia which are traversed by two fuscous lines. Exp. al. 13—14 mm. Hindwings and cilia brownish grey; ♂ with expansible fuscous hair-pencil. Abdomen leaden grey; ♀ ochreous towards the base. Legs whitish ochreous, with tawny brown bands across the tibiae and tarsi.

Type ♂ (26824); ♀ (26866) *Kauai*, Mus. Wlsm.

HAB. KAUAI: 3000—4000 ft., (12) v.—vi. 1894.—MOLOKAI: sea-level, (1) v. 1893, (1) 12. vi. 1893. Fourteen specimens.

**296.** (160) *Hyposmocoma subscolopax*, sp. nov. (Pl. XXIV. fig. 1).

Antennae fuscous, with faint pale annulations. Palpi whitish ochreous, with two fuscous bands around the median and two around the terminal joint. Head pale ochreous, sometimes speckled with fuscous. Thorax fuscous. Forewings brownish fuscous, mixed with rust-brown, crossed by whitish bands speckled with brown; the first narrow, at one-fifth from the base, encloses a short basal patch, its outer edge slightly curved outward on the fold; this white band, although much suffused with the dark ground-colour, is traceable along the dorsum connecting it with a broader band, scarcely beyond the middle, which is dilated outward nearly to the end of the fold and contains at its inner edge a more or less distinct discal spot; before the apex is a strong white costal spot, with a few whitish scales on the opposite margin; a few raised scales near the dorsum on the basal patch and before the tornus; cilia whitish ochreous, varying to whitish, mottled along their basal half. Exp. al. 11—14 mm. Hindwings and cilia pale brownish grey; ♂ with subcostal hair-pencil. Abdomen brownish grey. Legs greyish, with pale fuscous annulations.

Type ♂ (27382); ♀ (27463) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, vi.—viii. 1895; Kona, 3000—5000 ft., 4. vii.—ix. 1892. Ten specimens.

In some varieties the white bands are more conspicuous, being less suffused or sprinkled. In one variety (28112) the white is distinctly suffused with rust-brown along the dorsum, the basal patch being also strongly tinged with the same colour.

This species differs from *scolopax* in the much more conspicuous white costal spot and in the clearer definition of the pattern, also in the form of the outer pale fascia, which in this species tends to encroach, above the middle, on the dark space preceding it. It differs from *tetraonella* in the possession of a subcostal hair-pencil.

**297.** (161) *Hyposmocoma tetraonella*, sp. nov. (Pl. XXIV. fig. 2).

Antennae brownish fuscous, with distinct white annulations, the basal joint brownish fuscous nearly to its apex. Palpi white, with two fuscous spots externally on the median joint and two fuscous annulations on the terminal joint. Head white, or whitish ochreous, sometimes with a brown suffusion. Thorax brownish fuscous. Forewings brown, with fuscous speckling, and white, or whitish, ill-defined transverse bands; the first at one-fifth, enclosing a basal patch, dilated outward along the dorsum and more or less connected with a median band which encloses the first discal spot; some white scales occur also around the outer discal spot; a white spot on the costa before the apex tends obliquely outward, some whitish scales also about the tornus and termen and in the base of the mottled cilia; a plical spot very slightly precedes the first discal, but these are sometimes almost lost in the general suffusion of the dark ground-colour. Exp. al. 11—12 mm. Hindwings dark tawny fuscous (sometimes paler in the ♀); cilia scarcely paler; ♂ without subcostal hair-pencil. Abdomen dark tawny fuscous. Legs greyish, hind tarsi very distinctly annulate with white and tawny fuscous.

Type ♂ (25748); ♀ (25428) Mus. Wlsm.

HAB. HAWAII: Kona, 3000—above 4000 ft., 24. VI.—10. VII., VIII., IX. 1892; Mt. Kilauea, VII. 1895. Twelve specimens.

It would be extremely difficult to justify the separation of this species from *sub-scolopax* but for the absence of the subcostal hair-pencil, it is however if anything slightly smaller, more mottled and with darker hindwings.

**298.** (162) *Hyposmocoma somatodes*, sp. nov. (Pl. XXIV. fig. 3).

Antennae fuscous, faintly annulate with pale greenish ochreous. Palpi ochreous, with olivaceous fuscous bands on the median and terminal joints. Head and Thorax olivaceous fuscous, with some admixture of ochreous scales. Forewings whitish ochreous, much sprinkled and suffused with olivaceous fuscous, the discal and plical spots together with the apex dark fuscous; the first discal is reniform, obliquely placed, encircled by the plain ground-colour; the second, at the end of the cell, internally pale-margined is rounder; the plical, also elongate, and produced downward at its apex; a basal patch is

faintly indicated and the dark shading does not obliterate a somewhat angular pale band from the costal cilia, attenuated downward to the tornus; cilia mottled on their basal half with dark fuscous and pale ochreous, outwardly pale greyish ochreous. Exp. al. 14 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen brownish grey. Legs whitish ochreous, with fuscous bands.

Type ♂ (27490); ♀ (25307) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895; Kona, 4000 ft., IX. 1892. Two specimens.

A rather sturdy, distinct-looking species, with somewhat obtuse palpi and very distinctly hairy legs.

**299.** (163) *Hyposmocoma belophora*, sp. nov. (Pl. XXIV. fig. 4).

Antennae brown, with pale ochreous annulations. Palpi pale ochreous, mottled with brown externally to beyond the middle of the median joint, with a brown ring before its apex; terminal joint much mottled with brown externally. Head and Thorax olive-brown, mixed with pale ochreous. Forewings olive-brown, sprinkled with pale ochreous scales; some whitish sinuous marks, before and about the middle, indistinctly define a dark plical spot succeeded by a discal spot above it, with a faint trace of a third in the darker brown at the end of the cell; this is succeeded by a white arrow-head mark, outwardly curved from the costa at two-thirds nearly to the apex, its lower and narrower barb reverting to the tornus; in the costal and terminal cilia are whitish spots alternating with olive-brown streaks. Exp. al. 15 mm. Hindwings very pale brownish grey; cilia brownish grey; ♂ without subcostal hair-pencil. Abdomen greyish. Legs pale cinereous, mottled and banded with brown.

Type ♂ (25652) Mus. Wlsm.

HAB. OAHU: Near head of Kawailoa Gulch, IV. 1893. Unique.

**300.** (164) *Hyposmocoma turdella*, sp. nov. (Pl. XXIV. fig. 5).

Antennae fuscous, very faintly annulate. Palpi brownish ochreous, banded with fuscous externally in two bands on each of the median and terminal joints. Head and Thorax rust-brown. Forewings rust-brown, sprinkled and shaded with fuscous and obscurely banded with ochreous; the darker shading narrowly limits a short rust-brown basal patch, its outer edge curved and crenulate, it is somewhat concentrated in two patches, on either side of the middle of the costa, which are diffused downward across the wing, but do not obliterate the rather pale-margined dark discal and plical spots; the apex of the wing is also clouded with fuscous and a line of the same runs through the ochreous cilia. Exp. al. 11—12 mm. Hindwings and cilia dark tawny fuscous; ♂ without subcostal hair-pencil. Abdomen greyish fuscous. Legs greyish fuscous, with pale ochreous spurs and tarsal bands.

Type ♀ (28676); ♂ (26510) Mus. Wlsm.

HAB. LANAI: 2000 ft., (3) VII. 1894, (1) XII. 1893. Four specimens.

Differs from *tetraonis* in the somewhat more acute and slender palpi, of which the terminal joint is somewhat longer than the median.

**301.** (165) *Hyposmocoma subcitrella*, sp. nov. (Pl. XXIV. fig. 6).

Antennae whitish ochreous, spotted above with fuscous. Palpi pale ochreous, annulate with fuscous, narrowly beyond the middle of the median joint; narrowly at the base, and widely before the apex, of the terminal joint. Head pale ochreous. Thorax orange-ochreous, speckled with fuscous. Forewings pale ochreous, mixed with orange-ochreous below the fold and near the lower angle of the cell, and profusely sprinkled with brownish fuscous, forming groups of scaling, crossing the wing obliquely outward at one-third, overspreading the dorsum; more thickly concentrated in a costal patch at two-thirds, which extends obliquely outwards beyond the end of the cell, and in a broken apical patch; there is a blackish patch at the base of the dorsum and another at the end of the cell; cilia ochreous, mottled at their base with brownish fuscous, a slender shade-line running through them beyond their middle. Exp. al. 10 mm. Hindwings and cilia pale grey; subcostal tuft in the ♂ grey. Abdomen yellowish grey. Legs greyish, tarsi alternately dark grey and whitish.

Type ♀ (27620); ♂ (27622) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., larva (lichenivorous?) on *Cheirodendron*, *Metrosideros*, etc., IV., excl. IV.—V. 1895. Three specimens.

The larval case, which is coated with frass, is streaked with black, especially along its lower edge; it bulges in the middle and is attenuate to either end, the ends obtuse.

**302.** (166) *Hyposmocoma inflexa*, sp. nov. (Pl. XXIV. fig. 7).

Antennae whitish ochreous, barred above with brown; basal joint brown nearly to its apex. Palpi whitish ochreous, mottled with fuscous externally near the base, and before the apex of each joint. Head whitish ochreous; face white. Thorax whitish, mixed with ferruginous. Forewings whitish, smeared with pale ferruginous before the middle, along the cell, and about the apex; with a short ferruginous and fuscous basal patch, a small fuscous antemedian subcostal spot and an inverted oblique fuscous fascia, from the costa at two-thirds to about the middle of the dorsum, broken on the cell; apical cilia pale ferruginous, tornal cilia pale brownish grey. Exp. al. 10 mm. Hindwings pale grey; cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen greyish fuscous. Legs pale cinereous, mottled with greyish fuscous.

Type ♂ (28264) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., V. 1896. Unique.

**303.** (167) *Hyposmoconia brevistrigata*, sp. nov. (Pl. XXIV. fig. 8).

Antennae pale fawn-brown, basal joint darkened above. Palpi whitish, a fuscous spot externally before the end of the median joint, a narrow band at the base and a wide band before the apex of the terminal joint. Head and Thorax fawn-brownish above; face brownish white. Forewings pale fawn-brownish, sprinkled and mottled with whitish ochreous, and some fuscous scales—these specially exhibited in a small elongate spot at the base of the costa, in two short length-streaks on the cell (one before, the other beyond the middle of the wing) and in two similar streaks in the fold (one near the base the other before the tornus), about the tornus is a similar streak lying on the dorsum; these streaks are all dark fuscous, which colour is also somewhat condensed in the position of a basal patch and on the costa before and behind the middle; a slender, pale, outwardly angulate, transverse line precedes the terminal area, a similar slender line being scarcely traceable at the base of the fawn-brownish cilia which become brownish grey on the dorsum. Exp. al. 12—13 mm. Hindwings and cilia pale brownish grey; ♂ without subcostal hair-pencil. Abdomen and Legs brownish grey; hind tarsi faintly spotted.

Type ♂ (26842); ♀ (27203) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v., (7) vi. 1894. Eight specimens.

**304.** (168) *Hyposmoconia discolor*, sp. nov. (Pl. XXIV. fig. 9).

Antennae tawny fuscous, with dark fuscous annulations. Palpi, median joint slightly clothed, white, a tawny brown annulus before its apex; terminal joint white, mottled with tawny brown. Head mixed white and tawny brown; face white. Thorax mixed white, tawny reddish brown and black. Forewings mixed with almost equal parts of white, tawny reddish brown, and black scaling; a basal patch of the darker combination sends out a rectangle on the fold, in the space beyond it white predominates, and this is followed by two groups of scattered black scaling, on the costa and dorsum before the middle, a similar group appearing before the tornus; from the middle of the wing runs a narrow streak of black scales nearly to the apex, passing first through the tawny reddish brown, and secondly through the same mixed with white; at the apex is a whitish spot, with some whitish scales on the margin, above and below it, alternating with black; cilia tawny reddish brown, on the dorsum tawny grey. Exp. al. 11 mm. Hindwings speckled with tawny fuscous on a paler ground; cilia dark tawny grey. Abdomen tawny brown. Legs fuscous, with whitish tarsal spots.

Type ♀ (27397) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, vii. 1895. Unique.

A very distinct species, not to be confused with any other.

**305.** (169) *Hyposmocoma fuscotogata*, sp. nov. (Pl. XXIV. fig. 10).

Antennae fuscous, delicately annulate with white; basal joint reddish ferruginous. Palpi reddish ferruginous, mottled with white, a fuscous shade before the apex of each joint externally. Head whitish ochreous. Thorax reddish ferruginous, mottled with whitish ochreous. Forewings bright reddish ferruginous, sprinkled with fuscous scales and mottled with whitish ochreous, which is specially noticeable in an incomplete fascia at one-fifth from the base, tending slightly outward from the costa to the fold; in a cuneiform spot at the commencement of the costal cilia, and narrowly around the margins of two fuscous discal spots, the first about the middle of the wing, the second at the end of the cell; cilia greyish ochreous, mottled on their basal half with ferruginous and fuscous, with a slender dark dividing line before their outer extremities. Exp. al. 13 mm. Hindwings dark fuscous; cilia tawny fuscous. Abdomen dark fuscous above, white beneath. Legs dark fuscous, the spurs and ends of the tibiae whitish, with four white tarsal annulations.

Type ♀ (26062) Mus. Wlsm.

HAB. MOLOKAI: Above 3000 ft., 30. V. 1893. Unique.

**306.** (170) *Hyposmocoma radiatella*, sp. nov. (Pl. XXIV. fig. 11).

Antennae very pale fawn-ochreous. Palpi fawn-whitish. Head pale fawn-brownish above; face fawn-whitish. Thorax pale fawn-brown, the ends of the tegulae whitish. Forewings pale fawn-brownish, the course of the veins indicated by fawn-whitish lines, some of which are blended in a streak to the apex; a small darker brown discal spot is faintly shown a little before the middle, preceded by a plical spot below it and followed by a larger one at the end of the cell; a fourth, a little above the fold, follows the first discal forming with this and the plical an equilateral triangle (probably not noticeable in slightly worn specimens); a few brownish spots lie along the costa and termen at the base of the pale fawn-ochreous cilia through which runs a brownish apical streak. Exp. al. 16—20 mm. Hindwings pale, shining, brownish grey; cilia pale fawn-ochreous; ♂ without subcostal hair-pencil. Abdomen and Legs pale fawn-ochreous.

Type ♀ (25260); ♂ (25768) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (9) IV. 1895; Mts., 3000—4000 ft., (4) V.—VI. 1894.—OAHU: Waianae Mts., about 3000 ft., (1) IV. 1892.—MOLOKAI: about 4000 ft., (2) 22. V.—9. VI. 1893.—HAWAII: Kona, 4000 ft., (5) 13. VIII.—8. IX. 1892, 3000 ft., (1) X. 1892; Hilo, 2000 ft., (3) XII. 1895. Twenty-five specimens.

In some specimens the predominant tint is fawn-whitish and the lines between the veins on the forewings are indicated in a rather darker shade of brown, the discal cell being entirely pale; in these the four spots are more pronounced and also of a rather darker shade. I am unable to regard them as distinct.



**307.** (171) *Hyposmocoma barbata*, sp. nov. (Pl. XXIV. fig. 12).

Antennae pale fawn-ochreous, the basal joint brownish in front. Palpi fawn-white; the median joint clothed with long scales projecting beneath it, with two oblique brownish bars, one near the base the other near the apex; the terminal joint with two slender longitudinal lines beneath. Head and Thorax pale fawn-ochreous, shaded with brownish fuscous; face paler. Forewings pale fawn-ochreous, sprinkled longitudinally with brownish fuscous, the dorsum clouded with the same throughout, except at the extreme base; the usual discal spots are indicated, and there are two plical spots, one before, the other beyond the first discal; a short fuscous basal streak between the fold and the costa; cilia pale fawn-ochreous, shaded with brownish fuscous at and beneath the apex. Exp. al. 15 mm. Hindwings shining brownish grey; cilia with a slight ochreous tinge. Abdomen fawn-grey. Legs pale fawn-ochreous.

Type ♀ (26219) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 5. VI. 1893. Unique.

Somewhat resembling *radiatella*, but differing in the dorsal shade, in the absence of the distinct vein-marks and in the hairy palpi, in which it agrees with *Aphthonetus*, but vein 6 is separate in the forewings and 6 and 7 of the hindwings are not stalked.

**308.** (172) *Hyposmocoma fractistriata*, sp. nov. (Pl. XXIV. fig. 13).

Antennae pale cinereous, the basal joint dark fuscous. Palpi pale cinereous, with a fuscous shade along the outer side of the median joint, on its basal half, and a fuscous spot before its apex; terminal joint with a fuscous spot at its base externally and a shade of the same colour before its apex. Head and Thorax pale cinereous; tegulae brownish fuscous. Forewings pale cinereous, with a broad brownish fuscous streak from the base, reaching along the fold to three-fourths of its length, thence diverted upward and attenuated to a point at the end of the cell beyond which is a small fuscous spot; the space between this streak and the dorsum is about half the width of that which separates it from the costa; the streak itself is diluted in parts to a paler tint, becoming almost ferruginous, and the apical and terminal portion beyond it is somewhat thickly overlaid with bronzy scaling and on the costal portion are a few broken lines of brownish fuscous scales along the veins; cilia pale cinereous, with a broken bronzy line along their base, sending out obscure dentate spots at and around the apex. Exp. al. 15--18 mm. Hindwings shining, pale bronzy cinereous; cilia with a slight ochreous tinge; ♂ with an ochreous subcostal hair-pencil. Abdomen and Legs pale cinereous, with a slight ochreous tinge.

Type ♀ (25012); ♂ (25009) *Oahu*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., (5) IV. 1892.—LANAI: 2000 ft., (2) I. 1894, (1) VII. 1894. Eight specimens.

**309.** (173) *Hyposmocomma longitudinalis*, sp. nov. (Pl. XXIV. fig. 14).

Antennae whitish, the basal joint dark brown above. Palpi white; the median joint loosely scaled beneath, shaded externally with brownish fuscous, especially towards the apex; a slender brownish fuscous line along the outer side of the terminal joint. Head dirty whitish, tinged with brownish fuscous. Thorax white, with a central line and two posterior lateral spots dark brownish fuscous, the tegulae smeared with a paler shade of the same. Forewings chalky white, with a dark brownish fuscous streak from base to apex, following the upper edge of the fold, somewhat dilated beyond the middle and attenuated to the apex, but not encroaching on the costa; in it is an indication of a triangle of slightly darker spots about the middle, two on the fold and one between them at the upper edge of the cell; the base of the dorsum and the whole of the costa is faintly shaded by a sprinkling of brownish fuscous scales, and a series of spots of the same colour, although not very distinctly defined, lies at the base of the whitish cilia on costa and termen, the dark longitudinal streak running through the cilia below the apex. Exp. al. 15—19 mm. Hindwings whitish grey, slightly dusted towards the apex; cilia pale brownish cinereous; ♂ without subcostal hair-pencil. Abdomen cinereous. Legs pale brownish cinereous.

Type ♀ (25667); ♂ (25715) *Hawaii*, Mus. Wlsm.

HAB. OAHU: gulch leading into Opaepa (Halemano), about 2000 ft., (1) I. 1893; Waialua (beach), (1) III. 1892.—MOLOKAI: above 3000 ft., (1) 30. V. 1893.—HAWAII: Mt. Kilauea, (1) VII. 1895; Kona, 2000—4000 ft., (2) 12. VIII.—IX. 1892; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892. Seven specimens.

A smaller species, with narrower and more pointed wings than *chilonella* + *chilonella*, which it resembles in pattern.

**310.** (174) *Hyposmocomma centralis*, sp. nov. (Pl. XXIV. fig. 15).

Antennae very pale ochreous. Palpi fuscous, the terminal joint paler than the median and sprinkled with whitish cinereous scaling above. Head and Thorax dull stone-whitish, the latter slightly streaked with fuscous scales. Forewings dull stone-whitish, minutely streaked and speckled along the veins with tawny fuscous scaling; a conspicuous dark tawny fuscous streak running from base to apex along the line of the discal cell, below which is a fuscous plical spot before the middle; a series of ill-defined fuscous spots around the apex and termen at the base of the mottled cinereous cilia. Exp. al. 27 mm. Hindwings greyish; cilia pale cinereous, mottled with whitish and grey at the extreme apex; ♂ without subcostal hair-pencil. Abdomen greyish, mottled with pale greyish ochreous on the basal half. Legs greyish, mottled with pale cinereous; the long hairs on the hind tibiae whitish cinereous.

Type ♂ (28034) Mus. Wlsm.

HAB. KAUAI: Lihue, 4000 ft., VII. 1896. Unique.

The single specimen is teratological, the right hindwing having nine veins, 4 and 4<sup>bis</sup> stalked.

**311.** (175) *Hyposmocoma chilonella*, sp. nov.

311<sup>a</sup>. (175<sup>a</sup>) *chilonella* Wlsm. + *triocellata*, var. nov. (Pl. XXIV. fig. 16).

Antennae pale fawn-ochreous, the basal joint shaded at the base with dark brown. Palpi whitish ochreous, the median joint tinged at its base and (usually) towards its apex with dark brown externally. Head and Thorax very pale fawn-ochreous (or bone-ochreous). Forewings pale fawn-ochreous, more or less dusted with brownish scales; at the base of the costa is a short dark brownish fuscous streak, and another at the base of the dorsum with a smaller one between them detached from the base, below which, from the middle of the base, runs a more or less interrupted brownish fuscous median streak, following the line of the discal cell, and attenuated beyond it to the end of the apical cilia; in this darkened space are two ocellated spots (each consisting of a small blackish spot surrounded by pale fawn-ochreous), one on the disc a little before the middle, the second at the end of the cell, with a similar plical spot, preceding the first discal, immediately below the dark discal streak; in some specimens the pale ground-colour almost obliterates the dark discal streak, and the paler colour, surrounding the three dark spots, is very inconspicuous; cilia pale fawn-ochreous, with a series of brownish fuscous spots at their base (5 terminal and 4 costal), an apical spot is also noticeable when not obliterated by the dark discal streak. Exp. al. 19—28 mm. Hindwings shining, silvery whitish; cilia with a slight ochreous tinge, with a broken fuscous shade-line along their base about the apex; ♂ without subcostal hair-pencil. Abdomen very pale fawn-ochreous, sometimes with darker shading towards the base. Legs very pale fawn-ochreous, with, or without, faint darker tarsal bands.

Type ♂ (26264); ♀ (26077) *Molokai*, Mus. Wlsm.

HAB. KAUAI: 3000—4000 ft., (1) V. 1894.—MOLOKAI: about 4000 ft., (3) 22. V.—VI. 1893.—HAWAII: Kona, 3000—4000 ft., (4) 13. VIII.—8. IX. 1892; Mt. Kilauea, (1) VIII. 1896; Oloa, (1) IX. 1896. Ten specimens.

311<sup>b</sup>. (175<sup>b</sup>) *chilonella*, sp. nov. + *chilonella*, var. nov. (Pl. XXIV. fig. 17).

Antennae whitish ochreous, shaded with brown on each joint above. Palpi whitish ochreous, the median joint sprinkled at its base and towards its apex with brown. Head and Thorax whitish ochreous. Forewings whitish ochreous, with a conspicuous dark umber-brown streak, running from the middle of the base to the apex and through the

apical cilia, slightly dilated towards the middle of the cell, but attenuated toward each extremity; above its base is a short oblique brown costal streak, a smaller one lying beneath its base, but not on the dorsum; above and beneath the central streak the wing is sparsely sprinkled with brownish scales, a small brown spot appearing on the fold before its middle, adjacent to the central streak; at the outer extremity are four terminal and four costal dark brown spots in the base of the whitish ochreous cilia. Exp. al. 26—33 mm. Hindwings shining, straw-whitish; cilia whitish ochreous; ♂ without subcostal hair-pencil. Abdomen whitish ochreous. Legs whitish ochreous, with a brown spot on the second tarsal joint above.

Type ♂ (27198); ♀ (26855) *Kauai*, Mus. Wlsm.

HAB. KAUAI: 3000—4000 ft., (2) VI. 1894.—HAWAII: Mt. Kilauea, (1) VII. 1895, (3) VIII. 1896. Six specimens.

In this variety the discal spots are obliterated by the dark central streak and in some specimens the plical spot also.

311<sup>c</sup>. (175<sup>c</sup>) *chilonella*, Wlsm. + *venosa*, var. nov. (Pl. XXIV. fig. 18).

Antennae cinereous, the basal joint umber-brown. Palpi pale cinereous, the median joint shaded externally towards its base and before its apex with umber-brown. Head whitish cinereous, a slight brownish shade posteriorly. Thorax pale cinereous, much suffused with umber-brown. Forewings pale cinereous, with all the veins more or less distinctly indicated throughout by umber-brown lines, among which the plical, and two discal spots are scarcely distinguishable; the basal spots are also traceable; cilia pale cinereous, broken along their base by umber-brown spots opposite to the ends of the dark lines between the veins. Exp. al. 24—35 mm. Hindwings and cilia shining, straw-whitish, with four dark spots around the apex at the base of the cilia; ♂ without subcostal hair-pencil. Abdomen and Legs shining, pale cinereous.

Type ♂ (26837) *Kauai*; ♀ (25206) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) VI. 1894.—MOLOKAI: about 4000 ft., (1) 9. v. 1893.—HAWAII: Mt. Kilauea, (3) VIII. 1896; Kona, above 2000 ft., (1) IX. 1892. Six specimens.

311<sup>d</sup>. (175<sup>d</sup>) *chilonella*, Wlsm. + *percondita*, var. nov. (Pl. XXIV. fig. 19).

Antennae fuscous, annulate with pale ochreous. Palpi fawn-brown. Head and Thorax umber-brown. Forewings umber-brown, with a slight admixture of pale fawn-ochreous, especially about the cell and around the darker fuscous spots, of which there are five specially noticeable, but somewhat diffused and indistinctly indicated; one at the extreme base below the costa, one at the extreme base of the dorsum, one on the middle of the fold, a larger one on the cell a little above and beyond it, and a small one at the

end of the cell, with a slight streak between the two; a series of fuscous spots also occurs in the base of the brownish fawn cilia around the apex and termen. Exp. al. 28—34 mm. Hindwings shining, pale brownish fawn; cilia fawn-ochreous, spotted on their base around the apex; ♂ without subcostal hair-pencil. Abdomen fawn-ochreous. Legs fawn-ochreous, the tarsi broadly banded with fuscous.

Type ♂ (28737) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Lihue, 4000 ft., (1) VII. 1896.—HAWAII: Mt. Kilauea, (7) VIII. 1896. Eight specimens.

Some specimens are paler than the type and lose the marginal spots.

The descriptions of the varieties of this species show a wide range of difference in intensity and distribution of colour. I had originally regarded them as distinct, but the intergradations are numerous and it appears to me to be one of the rare instances in which a species ranging over several of the islands fails to establish for itself any recognisable local form. The size as well as the colour of the specimens is very variable and this difference is to be found in connection with each separate pattern or peculiarity. If anyone had before him the varieties described above without the intermediate gradations he would undoubtedly regard them as distinct species, but in the absence of a knowledge of their life-histories it seems preferable to describe them as varieties rather than species.

**312.** (176) *Hyposmocoma epicharis*, sp. nov. (Pl. XXIV. fig. 20).

Antennae pale ochreous, the basal joint slightly shaded above with fuscous. Palpi pale ochreous. Head whitish ochreous. Thorax pale ochreous. Forewings pale ochreous, sprinkled with pale fawn-ochreous scales, more profusely about the base and below the fold; with three small brownish spots, one in the middle of the fold, one above and beyond it on the cell and another at the end of the cell; cilia pale ochreous. Exp. al. 30 mm. Hindwings shining, straw-whitish; the cilia with an ochreous tinge. Abdomen (missing). Legs whitish ochreous.

Type ♀ (25164) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 24. VI. 1893. Unique.

**313.** (177) *Hyposmocoma subnitida*, sp. nov. (Pl. XXIV. fig. 21).

Antennae straw-whitish, barred above with fuscous; the basal joint fuscous. Palpi straw-whitish, the median joint grey externally; with two slender grey lines along the under side of the terminal joint. Head and Thorax straw-whitish. Forewings shining, straw-whitish, with pale straw-ochreous cilia through which run three or four brownish streaks originating in spots at their base; a short fuscous streak at the extreme base of

the costa; (in one specimen, ♂ 27441, there are two discal spots, the first at the end of the cell, the other slightly before the middle, and a few fuscous scales are scattered about the apical half of the wing, the latter occur in more than one specimen). Exp. al. 18—20 mm. Hindwings shining, grey; cilia greyish ochreous; ♂ without subcostal hair-pencil. Abdomen straw-ochreous. Legs pale straw-ochreous, with pale fuscous tarsal bands.

Type ♂ (27436); ♀ (27439) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (3) VI.—VII. 1895; Kona, 4000 ft., (3) VII.—13. VIII. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892. Seven specimens.

A somewhat more distinct variety also occurs (♂ 25222) in which the spots are represented by cloudy accumulations of scales and the scattered fuscous scaling is more condensed on the apical half of the wing, the lines in the cilia being sometimes blended into a continuous shade.

## 26. HYPERDASYS, gen. nov.

(ὕπερδασυς = very hairy.)

Type *Hyperdasys cryptogamiellus* Wlsm.

Antennae shorter than the forewings; ♂ shortly uniciliate, serrate towards the apex; ♀ simple. Labial Palpi recurved, smooth; ♂ with the terminal joint slightly longer than the median, the two gradually tapering to an acute apex; ♀ with the terminal joint more slender and slightly longer than in the ♂. Maxillary Palpi short. Haustellum well-developed. Ocelli absent. Head thickly clothed above, the scales more or less upstanding. Thorax smooth. Forewings elongate, narrow, lanceolate to the apex, termen very oblique; ♂ with a long fold or flap, from the base to two-thirds on the underside of the costa, fringed with long cilia, beneath it on the upper edge of the cell is an expansible fringe of hair-scales as long as the width of the wing: neuration 12 veins; 7 and 8 stalked, 7 to costa; 3 from before angle of cell, 3 and 5 approximated to 4. Hindwings as broad as the forewings, obtusely rounded at the apex, with long dorsal cilia; ♂ and ♀ with limbal hair-pencil, subcostal hair-pencil absent: neuration 8 veins, all separate; 6 and 7 approximating towards base; 5 almost straight; 2, 3 and 4 remote, 2 recurved. Abdomen slender. Legs, hind tibiae somewhat hairy above, spurs and tarsi long and slender.

### 314. (1) *Hyperdasys semiustus*, sp. nov. (Pl. XXIV. fig. 22).

Antennae dark brown to two-thirds their length, thence pale ochreous, the basal joint tipped with pale ochreous. Palpi, with the median joint pale ochreous, shaded with dark brown externally before its apex; terminal joint dark brown.

Head pale ochreous. Thorax dark brown; tegulae pale ochreous, shaded with brown. Forewings very pale ochreous towards the costa where they are only slightly shaded with dark brown; dark umber-brown on the dorsal two-thirds and at the apex, slightly mixed with pale ochreous; three dark brownish fuscous spots, one on the middle of the fold, a larger one above and beyond it on the cell, a third at the end of the cell; in addition to these is a very small one at the extreme base of the costa and a distinct terminal series, those at and above the apex running through the pale ochreous cilia, those below the apex (to the number of five) confined to the base of the pale ochreous cilia, a narrow pale ochreous terminal line marking the margin before them. Exp. al. 17—24 mm. Hindwings pale leaden grey; cilia pale brownish ochreous. Abdomen brownish ochreous. Legs pale ochreous, the hind tibiae with brownish bands across them.

Type ♂ (26860); ♀ (27196) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (5) VI. 1894. Six specimens.

In *semiustus* the costal fold has shorter cilia than in the typical species.

**315.** (2) *Hyperdasys arundinicolor*, sp. nov. (Pl. XXIV. fig. 23).

Antennae tawny grey. Palpi, ♂ tawny greyish fuscous on their outer sides, with a slender whitish ochreous line running along the under side, the whole inner side much paler than the outer: ♀ dark tawny grey, the median joint slightly washed with pale ochreous above. Head and Thorax, ♂ pale ochreous, the latter with a tawny fuscous median streak, the base of the tegulae also tawny fuscous: ♀ dark tawny grey, a slender ochreous lateral streak above each eye. Forewings, ♂ pale ochreous, with a pale tawny suffusion, commencing in a patch at the base of the costa and extending outward along the middle to beyond the end of the cell, dilated downwards as far as the fold; in it a darker spot on the middle of the fold, another above and a little beyond it on the cell, a third at the end of the cell, with a series of smaller spots around the apex and termen at the base of the pale ochreous cilia which are tinged with tawny grey at the apex: ♀ with the costa, apex and dorsum tawny brown with a greyish tinge; a broad pale ochreous streak running from the middle of the base nearly to the termen, its lower margin scarcely below the fold, its upper edge somewhat clearly defined along the middle of the cell, at the end of which is a small dark spot; there is also a narrow spot in the fold a little beyond the middle, another above and a little beyond it being sometimes indicated; cilia brownish grey. Exp. al. ♂ 17—♀ 21 mm. Hindwings shining, pale leaden grey; cilia pale greyish ochreous. Abdomen greyish, darker in the ♀. Legs pale greyish.

Type ♂ (27093); ♀ (27071) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v.—vi. 1894. Five specimens.

**316.** (3) *Hyperdasys unicolor*, sp. nov. (Pl. XXIV. fig. 24).

Antennae testaceous. Palpi and Head pale testaceous. Thorax and tegulae dark reddish fawn. Forewings dark reddish fawn, with three faintly indicated slightly darker spots; two on the disc a little before the middle of the wing, the lower one placed obliquely a little beyond the upper, the third at the end of the cell; cilia testaceous. Exp. al. 20 mm. Hindwings greyish; cilia pale testaceous. Abdomen dull fawn-grey; anal tuft pale testaceous. Legs pale testaceous, the tarsi faintly blotched above with fawn-grey.

Type ♂ (26408); ♀ (26372) Mus. Wlsm.

HAB. MOLOKAI: above 4500 ft., VII. 1893; forest above Pelekunu, 21. IX. 1893. Two specimens.

The subcostal fringe is apparently somewhat shorter and less developed than in *cryptogamiellus*.

**317.** (4) *Hyperdasys cryptogamiellus*, sp. nov. (Pl. XXIV. fig. 25).

Antennae whitish ochreous, barred above with fuscous. Palpi whitish ochreous, the terminal joint sprinkled beneath with blackish scales from base to apex. Head stone-grey. Thorax pale stone-greyish. Forewings whitish ochreous, profusely dusted with greyish fuscous; a dark fuscous spot at the base below the middle is followed by another in the middle of the fold; above and beyond this is an elongate spot a little beyond the middle of the cell, followed by another at its outer edge; a series of smaller dark fuscous spots along the base of the pale ochreous costal and terminal cilia. Exp. al. 16—20 mm. Hindwings greyish; cilia pale ochreous. Abdomen pale ochreous. Legs whitish ochreous, shaded with pale greyish fuscous.

Type ♂ (27462); ♀ (28109) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (3) V. 1894.—OAHU: Waianae Mts., 3000 ft., (4) IV. 1892.—MOLOKAI: above 3000 ft., (6) 30. V.—12. VII. 1893.—LANAI: 2000 ft., (1) II. 1894.—HAWAII: Kona, 2000—3500 ft., (1) 25. VI. 1892, (8) IX.—X. 1892; Oloo, (1) VII. 1895; Mt. Kilauea, (1) VII. 1895, (3) VIII. 1896. Twenty-eight specimens.

This species varies considerably in its colouring and in the shape and intensity of the spots. In some specimens a small spot, or streaklet, appears a little removed from the base beneath the costa; in some the first discal spot is divided into two parts. Some varieties are much paler than others, assuming a pale bone-colour, these are more or less obscurely streaked with brownish fuscous shading, nowhere concentrated. The generic character of the bold fringe of hair-scales arising from the edge of the costa beneath is always apparent in the male.



## 27. EUPERISSUS, Btl.

(εῦ = well ; περισσός = extraordinary.)

Type *Euperissus cristatus* Btl. (Btl. 1881).

EUPERISSUS, Btl., Ann. &amp; Mag. NH. (5. s.) VII. 401—2, fig. 1 (1881).

Antennae, ♂ nearly as long as the forewings, ciliate  $2\frac{1}{2}$ , gradually diminishing to the middle, serrate beyond the middle ; basal joint without pecten : ♀ simple. Ocelli absent. Maxillary Palpi moderate, dependent. Labial Palpi recurved to above the vertex ; median and terminal joints of about equal length ; smooth, both joints appearing grooved throughout through the slight projection of the lateral scaling. Haustellum scaled throughout. Head smooth, side-tufts appressed, meeting in the median line. Thorax smooth. Forewings elongate, narrow, apex slightly depressed, pointed, termen obliquely rounded : neuration 12 veins ; 7 and 8 stalked, 7 to costa ; 2 from  $\frac{2}{3}$  ; 3 from midway between 2 and 4 ; 5 nearer to 4 than to 6 ; 12 very long ; 10 nearer to 9 than to 11 ; an internal vein from base of 6 to beyond 11. Hindwings as broad as the forewings, apex depressed, obtusely pointed, termen obliquely rounded, dorsum almost parallel with costa ; ♂ with a fringe of hair-scales along lower edge of cell from the base to its middle ; ♂ and ♀ with a long, expansible, limbal hair-pencil, longer in the ♂ than in the ♀ : neuration 8 veins, all separate ; 2, 3 and 4 remote at origin ; 2 recurved ; 5 nearer to 4 than to 6 ; 6 and 7 separate, almost parallel ; 8 not connected with cell. Abdomen rounded. Legs long, hind tibiae with short hairs.

Apparently related to *Orthotaelia*, Sph., which however has 7 and 8 of the forewings separate.

318. (1) *Euperissus cristatus* Btl. (Pl. XXIV. fig. 26).*Euperissus cristatus* Btl., Ann. & Mag. NH. (5. s.) VII. 401—2, No. 40, fig. 1 (1881)<sup>1</sup>.

Antennae brownish grey, the serrations on the outer half blackish ; basal joint blackish. Labial Palpi whitish ochreous on the inner side, shaded with grey on the outer side of the second joint ; a slender whitish ochreous line beneath from base to apex, margined on either side with blackish. Maxillary Palpi whitish ochreous. Head and Thorax brownish ochreous, the base of the tegulae greyish fuscous. Forewings pale leaden grey, suffused with a brownish ochreous tinge from the base, extending along the fold and along the discal cell ; with three large black spots, one in the fold beyond its middle, another on the cell straight above it, a third at the end of the cell, [in some specimens these spots are not so distinct, and there are indications of very indistinct spots towards the base] ; cilia brownish ochreous, with a series of ten blackish dentate spots along their base (six terminal and four costal). Exp. al. 30—35 mm. Hindwings leaden grey ; ♂ with a fringe of brownish ochreous hair-scales along the lower edge of the cell reaching from the base to its middle ; on the limbus is a long

pencil of brownish ochreous hair-scales ; ♀ with the limbal hair-pencil, but without the cilia along the edge of the cell ; cilia scarcely paler than the wings, with an indication of four obscure darker spots in their base below the apex. Abdomen greyish fuscous, with a brownish ochreous patch near the base. Legs pale leaden greyish, tinged with ochreous on their inner sides.

Type ♂ (72: 81. 7) Mus. Br. [Caenotype ♂ (28650) ; ♀ (28593) Mus. Wlsm.]

HAB. OAHU: Mts. near Honolulu (Blackburn)<sup>1</sup>.—MOLOKAI: above 3000 ft., 5. VI. 1893 (Perkins).—HAWAII: Olaa, 2000 ft., IX., XI. 1896 ; Hilo, 2000 ft., XII. 1895 (Perkins). Four specimens.

Females of this species can be distinguished from those of the very similar *Semnoprepia fulvogrisea*, Wlsm., by the grooved appearance of the palpi and by the possession of two spots before the discoidal on the forewings.

## 28. SEMNOPREPIA, gen. nov.

(σεμνοπρέπεια = a solemn bearing.)

Type *Semnoprepia fulvogrisea* Wlsm.

Antennae, ♂ nearly as long as the wings, biciliate  $2\frac{1}{2}$ , gradually diminishing to the middle, serrate beyond the middle ; basal joint without pecten : ♀ simple. Maxillary Palpi moderate, dependent. Labial Palpi recurved to above the vertex, terminal joint as long, or longer than median ; smooth. Haustellum scaled at base. Head smooth, side-tufts appressed. Thorax smooth. Forewings elongate, narrow, apex slightly depressed : neurulation 12 veins ; 7 and 8 stalked, 7 to costa ; 3 and 5 approximated to 4, 3 from before angle ; 12 very long, 10 approximated to 9 ; an internal vein from base of 6 to beyond 11. Hindwings as broad as forewings, apex depressed, obtusely pointed, termen obliquely rounded, dorsum almost parallel with costa ; ♂ and ♀ with expansible limbal hair-pencil : neurulation 8 veins, all separate ; 2, 3 and 4 remote at origin, 2 recurved ; 5 approximated to 4 ; 6 and 7 separate, almost parallel ; 8 not connected with cell. Abdomen rounded. Legs long, hind tibiae with short hairs.

Closely allied to *Euperissus*, Btl., but differing in the absence of the fringe of hair-scales along the lower edge of the cell in the hindwings of the ♂. Apparently related to *Orthotaelia*, Stph., but differing in having 7 and 8 of the forewings stalked.

## 319. (1) *Semnoprepia fulvogrisea*, sp. nov. (Pl. XXIV. fig. 27).

Antennae tawny grey. Palpi tawny grey, paler on their inner sides. Head and Thorax tawny grey. Forewings tawny grey, with a dark fuscous, somewhat crescent-shaped, spot at the end of the cell ; cilia pale tawny grey, with alternate dark fuscous and whitish ochreous spots along their base, forming a series of about ten (four costal

and six terminal). Exp. al. 25—27 mm. Hindwings paler, tawny grey, with a faintly indicated darker spot at the end of the cell, and some ochreous streaks and intermediate dark shades at the base of the tawny grey cilia toward the apex. Abdomen shining, pale grey, with a slight ochreous tinge above towards the base. Hind Legs tawny grey, with pale spots at the terminations of the tarsi and tibiae, spurs pale.

Type ♂ (26951); ♀ (26952) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., v.—vi. 1894. Seven specimens.

Very similar to *Euperissus cristatus*, Btl., but lacking the spot in the fold and that above it on the cell.

**320.** (2) *Semnoprepia petroptilota*, sp. nov. (Pl. XXIV. fig. 28).

Antennae brownish cinereous, the basal joint fuscous. Palpi whitish ochreous, shaded externally and round the terminal joint with slaty fuscous. Head whitish ochreous. Thorax pale slaty fuscous. Forewings pale brownish cinereous, profusely sprinkled with fuscous, with a small dark fuscous spot on the middle of the fold, a larger one on the disc above and beyond it, a third at the end of the cell and a series of fuscous spots at the base of the pale brownish cinereous cilia on the costa apex and termen. Exp. al. 19—21 mm. Hindwings greyish; cilia brownish cinereous, with shade-spots at their base near the apex. Abdomen brownish grey; anal tuft whitish ochreous. Legs pale slaty fuscous, with pale cinereous tarsal annulations.

Type ♂ (28746) *Hawaii*, Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., (2) v. 1896; Haleakala, 5000 ft., (1) v. 1896.—HAWAII: Mt. Kilauea, (3) viii. 1896. Six specimens.

The ♀ is at present unknown unless it has been wrongly referred to *Hyperdasys cryptogamiellus*.

**321.** (3) *Semnoprepia margella*, sp. nov. (Pl. XXV. fig. 1).

Antennae pale stone-greyish, the basal joint fuscous. Palpi pale stone-greyish, tinged with pale slaty greyish externally. Head whitish ochreous. Thorax stone-grey, tinged with slaty grey. Forewings stone-whitish along the middle, the margins and apex suffused with slaty greyish fuscous; an elongate dark fuscous spot on the middle of the fold lies a little nearer to the base than a somewhat similar spot on the cell, the latter throwing out projections in the direction of a smaller lunate spot of the same colour at the end of the cell; a broken line of the pale ground-colour around the termen and apex is succeeded by a dark fuscous shade, at the base of the whitish cinereous cilia, broken into dentate spots along the termen. Exp. al. 20 mm. Hindwings greyish;

cilia pale brownish grey. Abdomen dark slaty fuscous. Legs brownish grey, with paler mottling.

Type ♂ (28743) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Unique.

It is possible that this may be a variety of *petroptilota*, but the specimens before me present no intermediate forms.

## 29. DIPLOSARA, Meyr.

Type *Scardia lignivora*, Btl. (Meyr. 1883).

DIPLOSARA, Meyr., Ent. Mo. Mag. xx. 35 (1883).

Antennae rather stout, serrate; ♂ more strongly serrate, each serration with a fascicle of short cilia ( $\frac{1}{2}$ ); basal joint moderate, without pecten. Maxillary Palpi rudimentary, short, drooping. Labial Palpi moderately long, recurved; median joint considerably thickened above and beneath with dense, somewhat rough scales, attenuated towards base; terminal joint as long as median, acute, posterior edge from base nearly to apex clothed with long, dense, obliquely projecting scales. Ocelli absent. Haustellum strong, scaled. Head with appressed scales. Thorax not crested. Forewings elongate, narrow, apex obtusely pointed, termen obliquely rounded, dorsum somewhat excavate from vein 3 to 1; surface with large tufts of raised scales: neuration 12 veins; 7 and 8 stalked; 3 approximated to 4; 4 from angle of cell; 5 closely approximated to 4, remote from 6; 11 from middle of radius; 10 approximated to 9; media almost obsolete. Hindwings as broad as forewings, elongate-ovate, cilia rather long (1); ♂ with costal fold containing an expansible subcostal hair-pencil: neuration 8 veins; 6 remote from 5, gradually approximated to 7 at base; 8 free, not connected with middle of cell by transverse vein; 3 about equidistant from 2 and 4; 4 from angle of cell, 4 and 5 normally stalked, but sometimes connate or even separated by a small space; discoidal weak; media strong from 6 to base. Abdomen not depressed, ♂ genital segments well-developed; ♀ with ovipositor extruded. Legs, posterior tibiae clothed above with long dense hairs.

Larva in a flattened case rounded at either end somewhat resembling an old-fashioned spectacle case; feeding on rotten wood.

The above description is largely copied from Meyrick (*l. c.*) but some additions and modifications have been rendered necessary after carefully studying a long series presenting considerable variation in the neuration of the hindwings.

The series of *Diplosara lignivora*, Btl., consists of 48 (13 ♂ + 35 ♀) specimens; of these 23 (8 ♂ + 15 ♀) have veins 4 and 5 of the hindwings stalked, in some the stalk is short (almost connate), in others it is long or very long; 7 (1 ♂ + 6 ♀) specimens have these veins connate in one wing and stalked in the other, the length of the

stalk varying; 8 (2 ♂ + 6 ♀) specimens have veins 4 and 5 connate in both wings; 3 (♀) specimens have these veins connate in one wing and very closely approximated in the other, while 7 (2 ♂ + 5 ♀) have them very closely approximated in both wings. One specimen (28675, ♀) from Kauai, belonging to the series with 4 and 5 connate, is teratological, with nine veins, 3 and 3<sup>bis</sup> being stalked.

These variations do not appear to be dependent on locality. The greatest variation is shown in the series of 27 from Hawaii (12 ⋈; 7 ⋈⋈; 4 ⋈; 4 ⊐). Only 2 specimens were received from Lanai (1 ⋈; 1 ⋈⋈). The 7 specimens from Molokai do not vary, all being ⋈. Oahu 4 specimens (3 ⋈; 1 ⊐). Kauai 8 specimens (2 ⋈⋈; 4 ⋈; 2 ⊐), in this series no specimen is ⋈ in both wings.

*Diplosara lignivora* is very variable in size and appearance but such variation is individual and cannot be correlated with locality or with neurulation.

**322.** (1) *Diplosara lignivora*, Btl. (Pl. XXV. fig. 2).

*Scardia lignivora*, Btl., Ent. Mo. Mag. xv. 273 (1879)<sup>1</sup>. *Diplosara lignivora*, Meyr., Ent. Mo. Mag. xx. 35 (1883)<sup>2</sup>; Sharp, Camb. NH. vi. (Ins. II.) 429, fig. 207 (1899)<sup>3</sup>.

Antennae pale cinereous, with dark brownish annulations, the basal joint dark brown. Palpi pale cinereous, shaded on the outer sides with a sprinkling of brownish fuscous scales, very noticeable at the base and before the apex of the terminal joint. Head pale cinereous, sprinkled with brown above. Thorax dark brown, with pale cinereous sprinkling. Forewings pale cinereous, profusely shaded with olivaceous brown and brownish fuscous, the latter forming a conspicuous large costal triangle, its apex reaching to the fold; several patches of raised scales precede this above and below the fold and one at least follows it resting on the outer end of the fold; a fuscous spot at the end of the cell is surrounded by whitish cinereous, the subapical shade varies in intensity, in some specimens olivaceous brown with brownish fuscous assuming a triangular form upon it; in others almost losing the dark triangular shade which is replaced by some sprinkling, a series of semidetached dark brownish fuscous spots occurring around the termen and apex; cilia pale cinereous, profusely dusted and shaded with olive-brown. Exp. al. 22—36 mm. Hindwings rosy greyish; cilia and subcostal hair-pencil pale brownish cinereous. Abdomen pale olive-brown. Legs pale cinereous, with brownish fuscous bands across the ends of the tibiae and on the tarsi.

Type ♂ ♀ (56: 79. 8) Mus. Br. [Caenotype (25657) Mus. Wlsm.]

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895, 3000—4000 ft., v. 1894, vi. 1894; Waimea Mts., 4000 ft., v. 1894 (Perkins).—OAHU: "Bred from larvae feeding on very rotten wood, in mountain forests" (Blackburn)<sup>1</sup>; Waianae Mts., 3000 ft., iv. 1892, larvae in decaying wood, vi. excl. .... 1893; near head of Kawaihoa Gulch, iv. 1893 (Perkins).—MOLOKAI: Mts., 4000 ft., larva in dead wood excl. 5—26. vii. 1893 (Perkins).—LANAI: 2000 ft., i. 1894, vii. 1894 (Perkins).—HAWAII: Olaa, vi., vii., ix. 1895; Olaa,

2000 ft., XI. 1896; Kona, 4000 ft., 29. VI., 12—15. VIII. 1892, above 5000 ft., 30. VIII. 1892, 3000 ft., IX. 1892; Mt. Kilauea, VIII. 1896; Hilo, 2000 ft., XII. 1895, I. 1896 (Perkins). Forty-eight specimens.

### 30. BLASTOBASIS, Z.

Type *Oecophora (Scythris) phycidella*, Z.

BLASTOBASIS, Z., Lin. Ent. x. 171 (1855); Hein., Schm. Deutsch. Tin. 387 (1870); Stgr.-Wk., Cat. Lp. Eur. 309, No. 257 (1871); Wlsm., Pr. Z. Soc. Lond. 1897, 91; Stgr.-Rbl., Cat. Lp. Pal. II. 163, No. 351 (1901); Dyar, Bull. US. Nat. Mus. 52. 528 (1902).

### 323. (1) *Blastobasis inana*, Btl. (Pl. XXV. fig. 3).

*Gracilaria inana*, Btl., Ann. & Mag. NH. (5. s.) VII. 404, No. 44 (1881)<sup>1</sup>.

Antennae fawn-brown, notched beyond the dilated basal joint which is whitish ochreous. Palpi whitish ochreous, fawn-brown externally, except at the apex of the median joint. Head whitish ochreous. Thorax pale fawn-ochreous, shaded across the anterior half with greyish fuscous. Forewings pale fawn-ochreous, with very indistinct pale fawn-brownish markings, consisting of a slight shade across the extreme base of the wing, a small spot a little beyond the middle of the discal cell, followed by another at its outer extremity, a slight costal shade above each of these two spots, a slight shade at the tornus and a series of six or seven very indistinct marginal spots around the apex and termen; cilia very pale fawn-ochreous. Exp. al. 11—15 mm. Hindwings brassy grey; cilia pale fawn-ochreous. Abdomen and Legs pale fawn-ochreous.

Type ♀ (112: 81. 7) *Oahu*, Mus. Br. [Caenotype ♀ (26460); ♂ (25124) Mus. Wlsm.]

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>; Waianae Mts., 3000 ft., IV. 1892; near head of Kawailoa Gulch, IV. 1893 (Perkins).—LANAI: 2000 ft., II. 1894 (Perkins). Five specimens.

This species has only 7 veins in the hindwings as in the European species, and is therefore unlikely to have been introduced from America although I have received a specimen with the note "Tineid bred from Yam. Introduced" (No. 9 Perkins; 1865 Koebele).

### 31. ENDROSIS, Hb.

Type *Tinea lactella*, Schiff. (Z. 1839).

ENDROSIS, Hb., Verz. Schm. 401 (1826); Z., Is. 1839, 191; Stn., Ins. Br. Lp. Tin. 163—4, Pl. V. 8<sup>a-c</sup> (1854); Meyr., HB. Br. Lp. 688 (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 163, No. 350 (1901); Dyar, Bull. US. Nat. Mus. 52. 543 (1902).

**324.** (1) *Endrosis lactella*, Schiff.

= *betulinella*, Hb.; = \**sarcitella*, Hw. (nec L.); = *sarcitea*, Hw.; = *fenestrella*, Stn. (?Sc.); = *kennicottella*, Clms.; = *lacteella*, Stgr.-Wk., etc.

*Tinea lactella*, Schiff., S-V. Schm. Wien 139, No. 37 (1776). *Tinea betulinella*, Hb., Sml. Eur. Schm. VIII. Tin. Pl. 3, 20 (1801), Pl. 67, 448 (1822). *Endrosis betulinella*, Hb., Verz. Schm. 401, No. 3874 (1826). *Tinea sarcitella*, Hw., Prodr. Lp. Br. 38, No. 88 (1802). *Anacamptis sarcitea*, Crt., Br. Ent. iv. expl. Pl. 189, p. 2 (1827). *Recurvaria sarcitea*, Hw., Lp. Br. 550, No. 14 (1828). *Anacamptis sarcitella*, Stph., Syst. Cat. Br. Ins. II. 196, No. 7195 (1829); Ill. Br. Ent. Haust. iv. 210, No. 21 (1834); Wd., Ind. Ent. Pl. 39, 1207 (1839). *Laverna sarcitella*, Crt., Br. Ent. xvi. expl. Pl. 735, p. 2 (1839). *Endrosis fenestrella*, Stn., Ins. Br. Lp. Tin. 163—4, Pl. V. 8<sup>a-c</sup> (1854); List Br. An. BM. xvi. Lp. 99—100 (1854). *Endrosis ?kennicottella*, Clms., Pr. Ac. Nat. Sc. Phil. XII. 165 (1860); Stn.-Clms., Tin. N. Am. pp. xi, 119 (1872). *Endrosis lacteella*, Stgr.-Wk., Cat. Lp. Eur. 323, No. 2703 (1871); Meyr., HB. Br. Lp. 688—9 (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 163, No. 3051 (1901); Dyar, Bull. US. Nat. Mus. 52. 543. No. 6170 (1902).

HAB. EUROPE. ASIA. AFRICA. N. AMERICA. AUSTRALIA. NEW ZEALAND. HAWAIIA. HAWAII: Kona, 4000 ft., VII.—VIII. 1892. Three specimens.

**32.** OECIA, Wlsm.

Type *Oecia maculata*, Wlsm.

OECIA, Wlsm., Pr. Z. Soc. Lond. 1897, 111, No. 44 (1897).

**325.** (1) *Oecia maculata*, Wlsm. (Pl. XXV. fig. 4).

*Oecia maculata*, Wlsm., Pr. Z. Soc. Lond. 1897, 111—2, No. 138 (1897)<sup>1</sup>.

“Antennae smoky greyish. Palpi pale ochreous. Head pale straw-ochreous. Thorax pale straw-ochreous, shaded with smoky grey. Forewings pale straw-ochreous, blotched and margined with smoky grey; this colour commencing near the base extends along the fold and along the costa without including the costal cilia and embraces the apex; on the middle of the fold is a stronger blotch of the same colour, slightly diffused downwards to the dorsum; a similar blotch a little above and beyond it scarcely before the middle; a third at the end of the cell extending almost across the wing; cilia pale straw-ochreous. Exp. al. 10—12 mm. Hindwings shining, pale yellowish grey; the cilia with a slight ochreous tinge. Abdomen pale ochreous. Legs with the tibiae and tarsi somewhat hairy; whitish ochreous.” [Wlsm.<sup>1</sup>]

Type ♂ (7231); ♀ (7233) *St Thomas*, Mus. Wlsm.

HAB. WEST INDIES: ST. THOMAS, 16—18. III<sup>1</sup>. BRAZIL: Pará (Amazons), 9. X.—10. I<sup>1</sup>. HAWAIIA. A single specimen without locality, collected by Blackburn (3639 Wlsm.) Mus. Meyrick.

Closely allied to *Endrosis lactella*, Schiff., and having apparently the same habits; very common on the inner walls of nearly every house in St Thomas. This species is extremely similar in appearance to *Tincola uterella*, Wlsm. (West Indies and Brazil).

### 33. MAPSIDIUS, gen. nov.

(μαψίδιος = casual.)

Type *Mapsidius auspicata*, Wlsm.

Antennae ( $\frac{3}{4}$ ) minutely biciliate, basal joint without pecten. Maxillary Palpi short, inverted over base of haustellum. Labial Palpi moderately recurved, reaching as high as the vertex; terminal joint shorter than median. Haustellum well-developed, naked. Head and Thorax smooth, the latter wide and stout in proportion to the size of the head. Forewings elongate, lanceolate, obtusely pointed: neuration 11 veins (3 and 4 coincident), the cell extending four-fifths the length of the wing; 7 and 8 stalked, enclosing the apex. Hindwings nearly as broad as the forewings, lanceolate, obtusely acuminate: neuration 8 veins, all separate; 4 and 5 tending to approximate at base, media strong. Abdomen short in ♂. Legs, hind tibiae moderately clothed, with a tuft of scales above the posterior pair of spurs, inner spur of the first pair very long, reaching nearly to the base of the second pair.

### 326. (1) *Mapsidius auspicata*, sp. nov. (Pl. XXV. fig. 5).

Antennae brownish cinereous; the basal joint whitish, shaded along the upper side. Palpi white, the median joint shaded externally with brownish grey. Head greyish, face white. Thorax brownish grey, sprinkled with white. Forewings white, smeared with brownish grey along the dorsum as far as the fold, with scattered greyish fuscous spots above and beyond it; a greyish fuscous spot at the base of the costa is followed by a second diffused costal spot at about one-third from the base, beyond which the costa is again pure white to the apex, several scattered spots occurring about the upper edge of the discal area, others more or less confluent about the tornus; there is a strong fuscous spot on the dorsum at about one-sixth from the base, followed by an inwardly oblique ill-defined dorsal streak reaching upward to the fold and interrupting the brownish grey dorsal shade; cilia at the apex white, below it brownish cinereous. Exp. al. 14—15 mm. Hindwings pale brownish cinereous, with an obscure small shade-spot showing through the wing at the end of the cell; cilia slightly paler, brownish cinereous; ♂ without sub-



costal hair-pencil. Abdomen very pale brownish cinereous. Legs white, tibiae and tarsi banded with fuscous.

Type ♀ (27659) *Kauai*; ♂ (26494) *Lanai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., iv. 1895.—LANAI: 2000 ft., vii. 1894. Two specimens.

**327.** (2) *Mapsidius quadridentata*, sp. nov. (Pl. XXV. fig. 6).

Antennae brownish grey; basal joint blue-black, with a white spot at its outer extremity. Palpi blue-black to beyond the middle of the median joint, thence white, extreme apex blackish. Head and face black in the middle, white at the sides and behind. Thorax black, with two white spots above. Forewings equally divided into blue-black and white with a faint ochreous tinge; the blue-black occupies the costal half from the base of the fold to the termen below the apex and sends out four angular tooth-like projections at even intervals into the white dorsal half, with a small one which might be counted as a fifth on the termen at the base of the snow-white cilia; above the fourth angular projection is a transverse white spot marking the termination of the very long discal cell; underside brown, cilia white. Exp. al. 28 mm. Hindwings brownish grey; cilia pale brownish. Abdomen brownish grey, anal tuft whitish. Legs regularly banded with black and white, spurs white, the last two tarsal joints blackish.

Type ♀ (26410) Mus. Wlsm.

HAB. LANAI: 2000 ft., i. 1894. Unique.

**328.** (3) *Mapsidius iridescens*, sp. nov. (Pl. XXV. fig. 7).

Antennae slaty grey, with green and rosy reflections on the basal joint and near it. Palpi slaty grey, paler on their inner side. Head, Thorax and Forewings slaty grey, with green and rosy reflections; cilia brownish grey. Exp. al. 27 mm. Hindwings shining, pale brownish grey; cilia brownish grey. Abdomen ochreous above and beneath. Legs slaty grey externally, ochreous on their inner sides, spurs slaty grey.

Type ♀ (26752) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894. Unique.

**34.** PRAYS, Hb.

Type *Phalaena curtisella*, Don. (= *coenobitella*, Hb.), Stph. 1834.

PRAYS, Hb., Verz. Schm. 413 (1826); Stph., Ill. Br. Ent. Haust. iv. 245 (1834); Z., Is. 1839, 191; Stn., Ins. Br. Lp. Tin. 54, 64—5, Pl. III. 4<sup>a-c</sup> (1854); List Br. An. BM. xvi. Lp. 42 (1854); Meyr., HB. Br. Lp. 693, 694 (1895); Stgr.-Rbl., Cat. Lp. Pal. ii. 133, No. 283 (1901).

**329.** (1) *Prays fulvocanellus*, sp. nov. (Pl. XXV. figs. 8—10).

Antennae greyish, the basal joint pale cinereous beneath. Palpi whitish, with a tawny shade along the outer side of the median joint and the basal half of the terminal. Head and face brownish cinereous. Thorax greyish brown. Forewings white, shaded with tawny along the costa to one-third, and along the dorsum to the end of the fold, the remainder of the wing-surface dotted with tawny spots; these have a tendency to form oblique shade-lines across the wing, parallel with the termen; the costal and dorsal shades are sometimes broken into separate spots by the white ground-colour; in some varieties a broad tawny brownish fascia, indented on its outer side on the cell is dilated to the dorsum, its inner margin tending obliquely inwards from costa to dorsum; a dark tawny triangular tornal spot in some varieties blends with the fascia, and the base of the wing is sometimes suffused with tawny brown; cilia tawny greyish, somewhat mottled with darker tawny shades; in some specimens the dark markings obliterate the white ground-colour, the wings and cilia being entirely dark fuscous. Exp. al. 8—16 mm. Hindwings purplish fuscous, semitransparent and iridescent along the cell, a bright steel-blue line along the costa; cilia purplish fuscous. Abdomen tawny brownish. Legs tawny greyish, with pale spurs and tarsal spots.

Type ♀ (27660); ♂ (27877) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (12) IV. 1895; Halemanu, 4000 ft., (2) V. 1895.—OAHU: Waianae Mts., about 2000 ft., (8) IV. 1892.—MOLOKAI: about 4000 ft., (1) 9. VI. 1893.—LANAI: 2000—3000 ft., (8) I.—II. 1894.—MAUI: Olinda (Haleakala), 4000 ft., (1) IV. 1894.—HAWAII: Mt. Kilauea, (3) VI. 1895; Kona, 2000—3000 ft., (6) IX.—I. X. 1892; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892. Forty-two specimens.

This species varies considerably in size and in the amount of brown suffusion.

**35.** PLUTELLA, Schrank.

Type *Cerostoma maculipennis*, Crt. (Schrank, 1802).

PLUTELLA, Schrank, Fn. Boica II. (2) 169 (1802).

1 (Type) *maculipennis*, Crt. (= *\*xylostella* Schrank).

Stn., Ins. Br. Lp. Tin. 66, 67—8, Pl. III. 6<sup>a-c, e</sup>, IX. 8 (1854): List Br. An. BM. XVI. Lp. 43 (1854); Meyr., HB. Br. Lp. 694, 701, No. 6 (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 137, No. 292 (1901); Dyar, Bull. US. Nat. Mus. 52. 492 (1902).

**330.** (1) *Plutella maculipennis*, Crt.

= *\*xylostella*, Hb., etc. (nec L.); = *\*annulatellus*, Wd. (nec Crt.); = *cruciferarum*, Z.; = *brassicella*, Fitch; = *limbipennella*, Clms. ♂; = *mollipedella*, Clms. ♀; = *cicerella*, Rndi.; = *galeatella*, Mab.; = *dubiosella*, Beut.; = "The Diamond-back Moth," Crt. *Cerostoma maculipennis*, Crt., Br. Ent. IX. expl. Pl. 420, p. 2 (1832) ♀. *Cerostoma*

\**xylostella*, Crt., Jr. R. Agr. Soc. Engl. III. 24—5, 30, 32, Pl. IV. 34—7 (1842): Farm Ins. 85—7, fig. No. 10<sup>9-12</sup>, 92, 93, Pl. C. 9—12 (1860). *Plutella cruciferarum*, Z., Stett. Ent. Ztg. IV. 281—3 (1843); Stn., Ins. Br. Lp. Tin. 68, Pl. III. 6<sup>a-c</sup>, IX. 8 (1854): List Br. An. BM. XVI. Lp. 43—4, No. 1 (1854); Meyr., HB. Br. Lp. 702 (1895). *Plutella maculipennis*, Wlsm. & Drnt., Ent. Mo. Mag. XXXIII. 173—5 (1897); Stgr.-Rbl., Cat. Lp. Pal. II. 137, No. 2447 (1901); Dyar, Bull. US. Nat. Mus. 52. 492, No. 5503 (1902). *Plutella cruciferarum*, Quanjér, Tijd. Ent. XLIX. 11—17, Pl. I—II. (1906), etc., etc.

HAB. EUROPE. ASIA. AFRICA. AMERICA. AUSTRALIA. NEW ZEALAND. OCEANIA.—“Probably wherever man eats cabbages” (Stn.). HAWAIIA. KAUAI: Kaho-luamano, 4000 ft., IV. 1895.—MOLOKAI: sea-level, V. 1893.—HAWAII: Kona, 1500—4000 ft., IX. 1892. Eleven specimens.

**331.** (2) *Plutella albovenosa*, sp. nov. (Pl. XXV. fig. 11).

Antennae dirty white, with very faint darker bars above near the tip. Palpi dirty white, the outer side of the median joint and the tuft streaked with yellowish brown. Head dirty white. Thorax dull white, tegulae yellowish brown. Forewings yellowish brown, the costal half and the terminal portion with slender dirty white lines along the veins; a darker brown streak runs from the base nearly to the end of the cell where there is a roundish semi-detached spot; the dirty white dorsal streak, sometimes with a yellowish tinge, throws up a slight excrescence into the dark streak about the middle of the wing, but is not sinuate before it; there are no dark marginal spots on the dorsum; cilia brownish, with a whitish line along their base. Exp. al. 12—13 mm. Hindwings and cilia brownish grey. Abdomen and Legs brownish grey.

Type ♂ (25605) *Hawaii*; ♀ (25946) *Oahu*, Mus. Wlsm.

HAB. OAHU: Waialua (beach), (2) III. 1892; Mt. Kaala, 1000—2000 ft., (1) III. 1892.—HAWAII: Kona, 4000 ft., (1) VII. 1892. Four specimens.

This species differs from *maculipennis*, Crt., noticeably in the marking out of the veins on the costal half of the forewings by white lines, in which it agrees with *rectivittella*, Z., from Bogota, but from this species it differs in the presence of an angular excrescence at the upper edge of the white dorsal streak. If *rectivittella* can rightly be regarded as a species distinct from the cosmopolitan *maculipennis* then *albovenosa* has at least equal claims, but as the ordinary form is undoubtedly associated with it in *Hawaii* it is quite possible that the distinctions relied upon may prove to be merely varietal, since all the points of difference mentioned by Zeller in his description of the South American species appear to come within the range of variation exhibited by the common form. In a very lengthy series from wide geographical range I have found no variety of *maculipennis* exhibiting the distinctly marked lines of veining on the costal half of the wing which characterise *rectivittella* and *albovenosa*.

## IV. CARPOSINIDAE.

## 36. HETEROCROSSA, Meyr.

Type *Gelechia adreptella*, Wkr. (Meyr. 1882).

HETEROCROSSA, Meyr., Pr. Lin. Soc. NSW. VII. 178—9 (VIII. 1882); NZ. Jr. Sc. I. 278 (XI. 1882); Tr. NZ. Inst. XV. 66 (1883); XVII. 148 (1885).

Meyrick employed male structures in defining this genus; he was unacquainted with the males of *neurophorella*, Meyr., and *gonosemana*, Meyr., but he possessed both sexes of *adreptella*, Wkr. († *abreptella*, Meyr.)—it is therefore obvious that *adreptella* is the type of the genus.

332. (1) *Heterocrossa plumbeonitida*, sp. nov. (Pl. XII. fig. 11).

Antennae grey. Palpi (♀) projecting three times the length of the head beyond it, median joint porrect, pale grey, minutely speckled with fuscous; terminal joint suberect, tawny fuscous, tipped with pale grey. Head grey. Thorax yellowish green, shaded with leaden grey. Forewings dull olive-green, with transverse bands and mottlings of shining, pale leaden grey; several tufts of mixed green and grey scales about the basal part of the wing are followed by a yellowish green reduplicated patch of slightly raised scales at the end of the cell, its outer edges whitish on the extreme costa, the upper extremities of the pale plumbeous bands are narrowly whitish; cilia leaden grey. Exp. al. 18 mm. Hindwings very pale greyish, the cilia with a slight ochreous tinge. Abdomen tawny grey. Legs pale cinereous.

Type ♀ (26767); ♂ (27576) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (1) V. 1894. Two specimens.

In the hindwings the cubitus is pectinate in both sexes.

333. (2) *Heterocrossa graminicolor*, sp. nov. (Pl. XII. fig. 12).

Antennae white, a fuscous bar above on the second joint. Palpi white, a broken fuscous shade along the outer side of the median joint and a ring around the middle of the apical joint. Head dirty whitish. Thorax dirty whitish, sprinkled with greyish fuscous. Forewings pale grass-green, inclining to whitish about the base, sprinkled throughout with blackish scales; a series of costal spots, diminishing from the base outward, brownish fuscous; the first, at the base, elongate, with raised ochreous scales along its margin; the second, at about one-third, also with a tuft of raised ochreous scales at its lower extremity; a little before and below this is a raised tuft of ochreous

scales below the fold, followed by another on the fold, a larger one occurring at the end of the cell; cilia mottled tawny grey. Exp. al. 16—18 mm. Hindwings and cilia pale greyish cinereous, with a slight tawny gloss. Abdomen ochreous. Legs dirty whitish.

Type ♀ (27712) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Seven specimens.

**334.** (3) *Heterocrossa olivaceonitens*, sp. nov. (Pl. XII. fig. 13).

Antennae greyish, basal joint olive-grey, with a fuscous shade on the first joints adjacent to it. Palpi (♀) very long, porrect, extending more than three times the length of the head beyond it; olive-grey, mixed with a few blackish scales, a blackish shade upon the upper side of the terminal joint. Head and Thorax olive-grey. Forewings rich, shining, olive-green, with four transverse lines of raised scale-tufts, black tipped with ochreous; the first at the base, the fourth at about two-thirds, all running obliquely inward from the costa nearly parallel to the oblique termen; some ochreous spots along the extreme costa alternate with somewhat wider blackish spaces, and an irregular band of five or six blackish dentate marks passes across the wing to the tornus, preceding the narrowly blackish termen; cilia tawny grey. Exp. al. 23—26 mm. Hindwings pale tawny greyish; cilia with a slight ochreous tinge. Abdomen greyish, anal tuft ochreous. Legs whitish cinereous, with transverse bands of olive-grey above.

Type ♀ (26927); ♂ (27050) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., V., VI. 1894, X. 1895. Three specimens.

Hindwings with cubitus pectinate in both sexes.

**335.** (4) *Heterocrossa subolivacea*, sp. nov. (Pl. XII. fig. 14).

Antennae whitish, faintly banded above; basal joint white, with a dark band on the joints adjacent to it. Palpi (♀) projecting more than twice the length of the head beyond it; white, strongly shaded with dark fuscous beneath the median joint and around the base of the terminal joint. Head white. Thorax greenish, smeared with brown and dark fuscous. Forewings very pale olivaceous green, with blackish markings in which is a slight admixture of brownish scales; the markings follow the same general course as in other closely allied species and consist of an oblique basal patch followed by an oblique half-fascia and an equally oblique median band, in this case not quite reaching the fold and consisting of separate costal spots, corresponding with lines of other spots beneath them, more or less blended by a central shade along the cell on which at its outer edge a distinctly raised tuft of whitish scales, with a smaller one beneath it, forms the outer margin of the band, a few slightly raised scales being also noticeable on some of the preceding markings; the sinuate, or almost biangulate, ante-terminal line reaches to the tornus, but does not touch the costal spot above it, the termen itself is also

narrowly shaded with black and a small costal spot precedes the rather darkly shaded apical cilia, beneath which the cilia are of a tawny greyish hue, somewhat darker along their basal half, within a slender pale parting line, than on their outer half beyond it. Exp. al. 16—18 mm. Hindwings pale grey, with a slight tawny tinge; cilia pale tawny cinereous. Abdomen and Legs pale cinereous; hind tarsi banded above with fuscous.

Type ♀ (26480); ♂ (26483) Mus. Wlsm.

HAB. LANAI: 2000 ft., VII. 1894. Three specimens.

Hindwings with the cubitus pectinate in both sexes.

**336.** (5) *Heterocrossa viridis*, sp. nov. (Pl. XII. fig. 15).

Antennae pale cinereous beneath, smeared and faintly banded with fuscous above; basal joint hoary. Palpi (♀) porrect, stretching three times the length of the head beyond it; hoary, with a slight greenish tinge, the terminal joint and the under side of the median joint blackish. Head hoary, with a faint greenish tinge. Thorax pale olivaceous grey, the tegulae with a black central spot. Forewings very pale olive-green, rather shining; with an oblique black basal patch, broad on the costa narrow on the dorsum; a broken black fascia running parallel with it at one-third from the costa to the fold; two similar broken fasciae, also parallel, about the middle of the wing, with a small black costal dot between them; these are joined by a blackish shade, on the middle of the cell, and both contain one or two patches of slightly raised scales tipped with whitish ochreous; beyond these is a sinuate black band from costa to tornus, scarcely oblique, its upper extremity forming one of a series of black costal spots which mark the commencement of each transverse band, the spaces between them being almost whitish; a single costal spot lies before the apex and the termen is also spotted with black; cilia tawny grey. Exp. al. 22 mm. Hindwings pale tawny grey; cilia pale cinereous. Abdomen tawny grey. Legs cinereous, banded with tawny grey.

Type ♀ (27259) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

**337.** (6) *Heterocrossa nigronotata*, sp. nov. (Pl. XII. fig. 16).

Antennae fuscous, the basal joint dirty greenish white. Palpi (♀) extending more than twice the length of the head beyond it; greenish white, the median joint speckled above and shaded beneath and at the base with fuscous, the terminal joint annulate with fuscous before the apex. Head greenish white. Thorax greenish grey. Forewings pale green, a number of fuscous patches and spots, some consisting of raised scales, are distributed about the wing-surface; first a series of more or less triangular fuscous patches extends along the costa; the first at the base forming a basal patch reaching to the dorsum, its outer edge sloping obliquely inwards; a second, at one-third, is rather

smaller and the four others, continuing nearly to the apex, diminish gradually in size, a small costal spot intervening between the third and fourth from the base; these, more or less connected with a large reduplicated fuscous patch at the end of the cell, may be regarded as forming a broken triangular patch extending to the fold, below which are some fuscous scales on the dorsum; this patch is preceded by a reniform fuscous spot on the upper edge of the fold and followed by an irregular line of broken fuscous spots, half-way to the termen, joining about the tornus a fuscous terminal line, broken into spots at its lower extremity; another fuscous spot lies below the fold at a little less than one-third from the base; cilia mottled tawny cinereous. Exp. al. 16—20 mm. Hindwings and cilia tawny grey. Abdomen cinereous. Legs whitish, shaded and banded with fuscous.

Type ♀ (28631); ♂ (27478) Mus. Wlsm.

HAB. HAWAII: Olaa, 2000 ft., (1) VI. 1895, (1) VII. 1895, (2) XI. 1896; Mt. Kilauea, (2) VII. 1895. Six specimens.

In the hindwings the cubitus is pectinate in both sexes.

**338.** (7) *Heterocrossa crinifera*, sp. nov. (Pl. XII. fig. 17).

Antennae dirty whitish. Palpi (♂) reaching the length of the head beyond it; (♀) stretching twice the length of the head beyond it; white, median joint blackish externally to half its length and at the base of the terminal joint. Head white. Thorax greenish, mottled with pale ferruginous and brownish fuscous. Forewings pale grass-green, the markings, which are all brownish fuscous, consist of a short oblique basal patch with an elongate costal spot beyond it, a minute dot placed obliquely inward beneath it; a central patch of confluent spots, reaching obliquely downward to the fold, but disconnected from three costal spots above it, the outer of which is reduplicated by a short fuscous line beneath it; two other costal spots lie before the apex and some thinly scattered groups of scales indicate a subterminal shade in the direction of the tornus, four or five more or less confluent spots lying along the termen before the somewhat tawny grey cilia; in fine specimens raised scales are to be found on the basal patch and on the median patch above the fold. Exp. al. 14—16 mm. Hindwings pale rosy grey; cilia slightly paler. Abdomen greyish cinereous. Legs whitish with a slight ochreous tinge.

Type ♂ (25163); ♀ (26281) *Molokai*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., (2) IV. 1892.—MOLOKAI: above 3000 ft., (2) 12—24. VI. 1893. Four specimens.

Described from Molokai specimens, those from Oahu are not in good condition but they appear to belong to the same species. The cubitus of the hindwings is pectinate in both sexes.

**339.** (8) *Heterocrossa herbarum*, sp. nov. (Pl. XII. fig. 18).

Antennae whitish cinereous, faintly banded above towards the base; basal joint whitish. Palpi (♀) extending three times the length of the head beyond it; white, with a brown shade beneath the median joint and around the base of the terminal joint. Head white. Thorax white, with a slight greenish tinge, and with a brown shade on the tegulae. Forewings very pale grass-green, with a brownish basal patch, broader on the costa than on the dorsum; two large brownish costal patches, one before and one about the middle, the first reaching nearly to the lower edge of the cell, the second somewhat shorter, both narrowly margined with whitish around their lower extremities; these are followed by four smaller costal spots of the same colour, the outer one a little before the apex, the intermediate costal spaces narrowly whitish; at the end of the cell is an obliquely placed reniform brown blotch, narrowly pale-margined, and preceded by a smaller spot above the middle of the fold (also pale-margined), a short curved streak lying below the fold nearer to the base; a faint sinuate brownish shade precedes the termen which is narrowly blotched with brown throughout, some small groups of brown scales at the tornus and on the dorsum before it; cilia whitish cinereous, faintly tessellated with brown. Exp. al. 21 mm. Hindwings and cilia white, with a faint rosy grey tinge. Abdomen and Legs pale brownish ochreous.

Type ♀ (26477) Mus. Wlsm.

HAB. LANAI: 2000 ft., VII. 1894. Unique.

In markings and tone of colour this species most resembles *graminis*, it can be separated by the second costal spot (beyond the basal patch) being large, somewhat triangular and not reduplicated; in *graminis* the second costal spot is broken up into two spots, the lower, reniform in shape, being the larger. *H. herbarum* and *subolivacea* are both from Lanai, in the former the second costal spot points outward while in the latter this spot is smaller, blacker and pointed inwards—the tone of green is quite different in these two species.

**340.** (9) *Heterocrossa graminis*, sp. nov. (Pl. XII. fig. 19).

Antennae whitish, a small grey spot above, adjacent to the clear white basal joint. Palpi (♀) stretching more than three times the length of the head beyond it; white, with a slight greenish tinge at the sides, smeared with olive-brown beneath the basal half of the median joint and on the upper side of the terminal joint. Head white. Thorax whitish, with a faint greenish tinge and one or two pale olive-brown spots on its anterior margin. Forewings pale grass-green, with olive-brown blotches and spots arranged in broken transverse lines, obliquely parallel with the termen; the first at the base, the others corresponding to four costal spots (in the central portion of the wing more or less



blended together) of which the first only reaches below the fold; some of the larger blotches, of which these lines are composed, have a slight cupreous gloss; the sub-terminal shade does not reach the costa and is not quite so oblique as the termen itself, along which runs a delicate grey shade, reduplicated in the greenish cilia. Exp. al. 15—21 mm. Hindwings and cilia white, with a slight rosy grey tinge. Abdomen and Legs pale brownish ochreous.

Type ♀ (26839); ♂ (27047) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (12) IV. 1895; Halemanu, 4000 ft., (1) V. 1895; Mts., 3000—4000 ft., (5) V. 1894, (10) VI. 1894. Twenty-eight specimens.

In the hindwings the cubitus is pectinate in both sexes.

This species differs from *herbarum* in having the second costal spot (beyond the basal patch) broken into two spots.

**341.** (10) *Heterocrossa tincta*, sp. nov. (Pl. XII. fig. 20).

Antennae cinereous, the basal joint white. Palpi (♀) projecting three times the length of the head beyond it; cinereous externally, whiter on their inner sides, the median joint shaded with brownish ferruginous at its base; the terminal joint brownish ferruginous, except at its apex. Head white. Thorax cinereous, with a greenish tinge. Forewings pale green, with a faintly indicated short basal patch, wider on the costa than on the dorsum; a series of six costal spots, a narrow broken terminal shade, and a small dorsal patch at one-third, all dull brownish grey; in addition to these markings an elongate blackish patch occupies the outer end of the cell, its outer extremity marked by raised creamy whitish scales, two smaller elongate spots of the same colour lie between it and the costa beneath the first and fourth costal spots respectively; beyond the latter is a sinuate line of about seven black scale-spots reaching to the tornus; there is an indication of one or two small dark scale-spots about the middle of the fold, the basal patch and dorsal spot both having raised scales at their outer edge; the spaces between the costal spots are creamy whitish; cilia rosy brownish grey. Exp. al. 18—21 mm. Hindwings pale rosy grey; cilia very pale ochreous. Abdomen pale greyish cinereous. Legs whitish ochreous.

Type ♀ (28041) *Hawaii*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (2) IV. 1895.—LANAI: above 2000 ft., (1) I. 1894.—HAWAII: Olaa, (1) IX. 1896. Four specimens.

The specimens from Kauai and Lanai are whitish rather than green, in the specimen from Hawaii the ground-colour is distinctly bright grass-green—this is probably the normal colouration, the other specimens being bleached.

The cubitus of the hindwing is pectinate in both sexes.

**342.** (11) *Heterocrossa gemmata*, sp. nov. (Pl. XII. fig. 21).

Antennae pale cinereous; the basal joint fuscous above. Palpi (♀) extending more than three times the length of the head beyond it; fuscous, tipped with pale cinereous, a few raised brownish scales above the base of the median joint. Head and Thorax brownish fuscous. Forewings brownish fuscous, mixed with dark fuscous and brilliant metallic emerald-green; at the base of the costa is a dark fuscous patch, with two dark basal spots below it, accompanied by raised scale-tufts of the paler ground-colour; this is followed at regular intervals by six smaller dark costal patches, and these are less distinctly repeated around the termen; on the outer half of the cell is an irregular reniform dark fuscous patch, its concave margin turned towards the costa and narrowly bordered by bright emerald-green scales which partially connect two irregular streaky patches of bright emerald-green, the one before it about the middle of the cell, the other beyond it, extending half-way between the cell and the termen; the first of these patches is accompanied by three tufts of raised scales, in which some pale cinereous is mixed, and the second has also at its base a large reduplicated tuft of raised scales of the dark fuscous ground-colour; cilia pale brownish fuscous. Exp. al. 17—25 mm. Hindwings pale brownish grey, with a slight iridescence; cilia brownish cinereous. Abdomen and Legs pale brownish cinereous; the latter banded above with brownish fuscous.

Type ♀ (28628) Mus. Wlsm.

HAB. HAWAII: Olaa, (1) IX. 1896; Olaa, 2000 ft., (5) XI. 1896. Six specimens.

**343.** (12) *Heterocrossa subumbrata*, sp. nov. (Pl. XII. fig. 22).

Antennae (♂) with very long cilia; pale fawn brownish, a small dark spot above adjacent to the basal joint. Palpi (♂) rather slender, projecting more than the length of the head beyond it; fawn brownish, slightly shaded beneath the median and around the terminal joint. Head and Thorax fawn-brown. Forewings fawn-brown, sprinkled with pale cinereous, the spaces, between the series of slightly darker costal spots and a sinuate line along the outer margin of the cell, reaching to the dorsum, obscurely pale cinereous; a slightly darker brown shade, running along the cell, is repeated at the base of the wing in the direction of the costa; beyond the end of the cell the apical and terminal portion of the wing is suffused with greyish fuscous on which a sinuous subterminal shade and a narrow terminal shade appear of a still darker tint; cilia brownish fuscous, slightly mottled. Exp. al. 15 mm. Hindwings tawny grey; cilia pale greyish cinereous. Abdomen brownish grey, anal tuft inclining to ochreous. Legs pale brownish ochreous.

Type ♂ (25092) Mus. Wlsm.

HAB. OAHU: Waianae Mts., IV. 1892. Unique.

In the hindwings the cubitus is pectinate in the ♂.

**344.** (13) *Heterocrossa bicincta*, sp. nov. (Pl. XII. fig. 23).

Antennae leaden grey. Palpi (♀) extending more than twice the length of the head beyond it; leaden grey. Head dull leaden grey. Thorax shining, leaden grey. Forewings shining, leaden grey, mixed with some dark olive-grey, especially along the costa to the middle and about some patches of slightly raised scales on the basal half; one of these, at the upper edge of the fold beyond its middle, has a slight ochreous tinge at the tips of the scales; there is also a somewhat thickened patch of shining grey at the end of the cell, beyond which are two curved dark olive-grey bands, one around the apex and termen, the other preceding it and separated from it by a parallel curve of shining leaden grey; on the costa beyond the middle are a few small whitish spots, a series of very small ones extending around the apex and termen at the base of the rather tawny grey cilia. Exp. al. 12—15 mm. Hindwings leaden grey; cilia scarcely paler. Abdomen brownish cinereous. Legs grey, with faint paler tarsal specks.

Type ♀ (26391) Mus. Wlsm.

HAB. MOLOKAI: about 4500 ft., 23. IX. 1893. Three specimens.

**345.** (14) *Heterocrossa dispar*, sp. nov. (Pl. XII. fig. 24).

Antennae whitish, with an ochreous tinge. Palpi (♀) projecting twice the length of the head beyond it; white on their inner sides, brownish grey externally. Head and Thorax whitish. Forewings brownish grey, sprinkled with white, the extreme base of the wing below the costa is whitish, with some raised scales, and these are succeeded by smaller patches of slightly raised white scales; one below the fold, one on the middle of the fold, and one beyond it about the lower angle of the cell; the plical spot is sometimes diffused upwards and inwards towards the costa, where there is a narrow white streak along the extreme margin, a little before the middle; half-way between this and the apex an outwardly oblique white band, narrowly reduplicated, on its outer side curving parallel with the margin, becomes evanescent before the tornus; cilia brownish grey, with a broken whitish line along their base. Exp. al. ♂ 9—10 mm.; ♀ 13 mm. Hindwings pale brownish cinereous. Abdomen brownish cinereous. Legs whitish.

Type ♀ (25678); ♂ (25577) Mus. Wlsm.

HAB. HAWAII: Kaawaloa (Kona), 1500—above 2000 ft., (3) IX. 1892; Kona, above 2000 ft., (2) IX. 1892. Five specimens.

In the hindwings the cubitus is pectinate in both sexes.

The ♂ is distinctly smaller than the ♀, the markings being less distinct, the white spots having a tendency to obliteration.

**346.** (15) *Heterocrossa pygmaeella*, sp. nov.

Antennae fuscous, basal joint pale cinereous. Palpi cinereous. Head pale cinereous. Thorax brownish olivaceous fuscous. Forewings brownish olivaceous fuscous, a faint indication of a costal shade-spot at one-third and an oblique transverse fascia from the costa at two-thirds running inward to the dorsum; owing to a fine sprinkling of cinereous scales the wing-surface, especially towards the apex, has a slightly mottled appearance; cilia brownish fuscous. Exp. al. 7 mm. Hindwings and cilia fuscous. Abdomen and Legs fuscous.

Type ♂ (25400) Mus. Wlsm.

HAB. HAWAII: Kona, 3000 ft., IX. 1892. Two specimens.

A very small inconspicuous species, with scarcely any indication of markings on the wings, it is easily distinguished from all the other species by its puny dimensions.

**347.** (16) *Heterocrossa latifasciata*, sp. nov. (Pl. XII. fig. 25).

Antennae tawny grey, basal joint white. Palpi (♀) porrect, projecting three times the length of the head beyond it; white, with a dark tawny grey shade along the under side of the median joint, especially on its basal half, and a fainter shade around the base of the terminal joint. Head and Thorax white; the latter shaded with tawny grey posteriorly. Forewings tawny grey, with shades of dark tawny fuscous, especially along the cell from the base and along the termen and apex, leaving a broad white fascia just beyond the end of the cell, rather less oblique than the termen itself, with which it is nearly parallel; along the costa is a series of rich tawny spots, alternating with white, and on the dark basal portion of the wing are patches of slightly raised dark tawny scales above and below; at the end of the cell a slender curved streak from the white fascia forms a semi-detached ear-shaped spot; cilia pale tawny grey. Exp. al. 18 mm. Hindwings and cilia pale tawny greyish. Abdomen tawny greyish. Hind Legs whitish, the tarsi shaded with tawny grey.

Type ♀ (25352) Mus. Wlsm.

HAB. HAWAII: Kona, 3500 ft., 29. VI. 1892. Unique.

**348.** (17) *Heterocrossa corticella*, sp. nov. (Pl. XII. figs. 26—28).

348<sup>a</sup>. (17<sup>a</sup>) *corticella*, Wlsm. + *semitogata*, var. nov. (Pl. XII. fig. 26).

Antennae bone-whitish, the basal joint suffused with brownish fuscous above. Palpi bone-whitish, shaded beneath the median joint and around the terminal joint with dark brownish fuscous. Head and Thorax bone-white. Forewings bone-white, with a short

basal patch consisting of raised tufts of bone-white scales, sprinkled towards the costa with brownish fuscous; beyond this is a large dark brownish fuscous patch extending along two-thirds of the dorsum, but along rather less than half the costa, throwing out an acute angle from its middle to the upper extremity of the cell, in this patch is also some indication of raised scale-tufts mixed with whitish scales; on either side of the fold, along its outer edge, runs a rather narrow band of the pale ground-colour, not sprinkled with darker scales except at the costa, but beyond this the remainder of the wing to the apex and termen is sparsely sprinkled with dark fuscous and rust-brown scales, which form on the costa five faint marginal spots with a slightly darker one between the second of these and the outer angle of the large dark patch; cilia dull greyish, speckled with bone-white. Exp. al. 16—19 mm. Hindwings pale bluish grey, the cilia with a slight ochreous tinge. Abdomen and Legs pale whitish ochreous.

Type ♀ (27228); ♂ (27323) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (2) IV. 1895; Mts., 3000—4000 ft., (1) V. 1894, (2) VI. 1894. Five specimens.

348<sup>b</sup>. (17<sup>b</sup>) *corticella*, Wlsm. + *piperatella*, nov. var. (Pl. XII. fig. 27).

Antennae dirty white, faintly banded above with fuscous towards the base, and with a fuscous spot above, adjacent to the basal joint. Palpi (♂) projecting not more than the length of the head beyond it; (♀) projecting twice the length of the head beyond it; dirty white, sprinkled with fuscous externally, and deeply shaded with fuscous beneath the median joint and around the base of the terminal joint. Head hoary white. Thorax whitish, shaded with brownish grey. Forewings white, with brownish grey and brown markings sprinkled with black scales; a strong black patch along the outer third of the cell, blending with shades of brown and grey, continued to the costa before it and to the dorsum beneath it; the oblique basal patch terminates in a black spot of raised scales at its narrow dorsal extremity, beyond which is a larger brownish dorsal patch, also profusely sprinkled with black scales, some at its upper edge strongly raised and tipped with white; there is a series of six dark costal spots, the space between and below them richly speckled with black and brown scales, which are also continued in a narrow ante-terminal line to the tornus; four brownish sprinkled spots lie along the termen, almost at the base of the dusky greyish cilia, which are sprinkled with white at intervals. Exp. al. (♂) 16—22 (♀) mm. Hindwings and cilia bone-whitish. Abdomen and Legs bone-whitish.

Type ♀ (27206); ♂ (27676) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (11) IV. 1895; Mts., 3000—4000 ft., (4) VI. 1894. Fifteen specimens.

348<sup>c</sup>. (17<sup>c</sup>) *corticella*, sp. nov. + *corticella*, var. nov. (Pl. XII. fig. 28).

Antennae (♂) biciliate 5 ; dusky cinereous, with a black spot above adjacent to the basal joint. Palpi (♂) short, projecting not more than the length of the head beyond it ; dusky cinereous, minutely speckled externally and across the upper side of the terminal joint with fuscous. Head and Thorax dusky cinereous ; the latter shaded across its anterior margin with brownish olive. Forewings cinereous, profusely sprinkled with rather shining, olivaceous greenish scales between the darker markings, which consist of a short oblique basal patch, a series of six costal spots (of which two, about the middle, are smaller than the others) and a broken diffused median shade—all brownish olivaceous ; there are several patches of raised scales on the median shade, and between this and the base these are rendered more conspicuous by streaks of dark fuscous running along them, their outer edges inclining to pale ochreous ; a few short dark fuscous streaks also accompany the veins around the upper angle of the cell ; along the termen is a brownish olivaceous shade, showing some tendency to be broken up into spots ; cilia greyish cinereous, their basal half dark tawny grey. Exp. al. 15—20 mm. Hindwings pale grey, with a faint rosy iridescence in a strong light ; cilia very pale cinereous. Abdomen brownish grey ; anal tuft pale ochreous. Legs whitish ochreous.

Type ♂ (26838) *Kauai*, Mus. Wlsm.

HAB. KAUAI : Kaholuamano, 4000 ft., (11) IV. 1895 ; Mts., 3000—4000 ft., (2) VI. 1894.—OAHU : Waianae Mts., 2000—3000 ft., (1) IV. 1892.—MOLOKAI : above 4500 ft., (1) II. IX. 1893. Fifteen specimens, all males.

Hindwings with the cubitus pectinate in the male.

This is a very variable species ; *latifasciata* (from Hawaii) is somewhat similar to var. *semitogata* but is more suffused with dark tawny fuscous. It would be unsafe to consider it an extreme form of *corticella* on the evidence of a single specimen.

### 349. (18) *Heterocrossa ferruginea*, sp. nov. (Pl. XIII. fig. 1).

Antennae (♂) biciliate 5 ; cinereous, faintly banded above near the base ; basal joint greyish fuscous above. Palpi whitish ochreous, shaded beneath the median joint. Head whitish ochreous. Thorax greyish fuscous, mottled with whitish ochreous and pale ferruginous. Forewings brownish ochreous, tending to whitish ochreous around the margins and on a pale costal spot at one-fourth ; the short oblique basal patch and a broad oblique median shade consist of a mixture of ferruginous and greyish fuscous scaling, almost obliterating the paler ground-colour, except along the dorsum ; the greyish fuscous tint is most noticeable in a series of costal spots, four of which are connected with the median shade, two others lie before the apex and a series of smaller ones around the termen ; connected with the median shade and basal patch are some groups of raised scales, sprinkled with dark fuscous (almost black) and tipped with whitish ;

these are especially noticeable at the outer extremity of the basal patch near the costa, on either side of the fold before its middle, and at the outer edge of the median band about the lower angle of the cell; some dark fuscous sprinkling also occurs in a faint subterminal band; cilia greyish, tessellated with darker shade-spots, separated by whitish ochreous along their basal half. Exp. al. 16—18 mm. Hindwings pale bluish grey; cilia with a faint ochreous tinge. Abdomen pale cinereous, anal tuft whitish ochreous. Legs whitish ochreous, faintly banded with grey.

Type ♂ (26393) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., (1) 9. VI. 1893; about 5000 ft., (1) 13. IX. 1893. Two specimens.

**350.** (19) *Heterocrossa togata*, sp. nov. (Pl. XIII. fig. 2).

Antennae white, faintly banded above towards the base. Palpi (♀) extending more than the length of the head beyond it; creamy white, the median joint shaded at the base beneath and the terminal joint around its base with brownish fuscous. Head and Thorax creamy white, the latter shaded with brownish fuscous. Forewings creamy white, shaded with brownish fuscous, a large patch of this colour, mixed with a few ferruginous scales, extends from the base over two-thirds of the wing-length, broken only by the pale ground-colour in an ill-defined, wedge-shaped, oblique costal patch at about one-third; the outer edge of the dark shade is slightly indented between the fold and the lower angle of the cell, beyond which a slight subterminal shade of mixed brownish fuscous and ferruginous scales runs to the tornus, but does not attain the costa; two or three small marginal spots are visible around the apex; cilia creamy white, faintly mottled with greyish. Exp. al. 14—18 mm. Hindwings very pale bluish grey; cilia with a slight creamy tint. Abdomen and Legs very pale whitish ochreous.

Type ♀ (26681); ♂ (28195) Mus. Wlsm.

HAB. MAUI: Haleakala, above 5000 ft., (1) III. 1894; Olinda (Haleakala), (1) IV. 1894, (1) V. 1896; Haleakala, 4000 ft., (1) 5000 ft., (17) V. 1896, 5000 ft., (20) X. 1896. Forty-one specimens.

In the hindwings the cubitus is pectinate in both sexes.

A variable species, in some forms the darker colour suffuses the wing for two-thirds from the base.

**351.** (20) *Heterocrossa divaricata*, sp. nov. (Pl. XIII. fig. 3).

Antennae (♂) with very long cilia; greyish olivaceous, the basal joint and that adjacent to it banded above with fuscous. Palpi greyish olivaceous; the median joint umber-brown externally at the base, terminal joint greyish fuscous, except at its apex.

Head and Thorax greyish olivaceous; the latter sprinkled with fuscous. Forewings pale olivaceous greyish, the markings dark chestnut-brown, mixed and sprinkled with black; these consist of an oblique basal patch, six costal spots (the first four of which form part of a large median triangular blotch, its apex reaching to the dorsum, much broken and interrupted on its upper half by the pale ground-colour) and a terminal and subterminal shade, almost blended at the tornus where they are broken into spots; cilia pale olivaceous grey. Exp. al. 12—16 mm. Hindwings very pale bluish grey, the cilia with a faint ochreous tinge. Abdomen stone-ochreous. Legs pale cinereous; the hind tibiae and first tarsal joints banded with fuscous.

Type ♂ (27040); ♀ (27152) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (30) IV. 1895; Mts., 3000—4000 ft., (3) V. 1894, (18) VI. 1894; Lihue, 4000 ft., (1) VII. 1896; Mts., 3000—4000 ft., (1) X. 1895. Fifty-three specimens.

In the hindwings the cubitus is pectinate in both sexes.

**352.** (21) *Heterocrossa nigromaculata*, sp. nov. (Pl. XIII. fig. 4).

Antennae and Palpi pale ochreous; the latter slightly shaded beneath and on the terminal joint. Head and Thorax pale ochreous; the latter sprinkled with chestnut-brown posteriorly. Forewings pale ochreous, with a broad median shade, running obliquely inwards, from costa to dorsum, and consisting of patches of chestnut-brown, mixed with blackish scales, having a tessellated or mottled appearance, caused by the intrusion of the pale ground-colour between them, especially about the fold and at the upper edge of the cell; about the middle of the wing, forming the central part of the median shade, is an elongate black patch around which some of the scales are slightly raised; a subterminal shade of chestnut-brown, mixed with blackish scales, reaches the tornus, and there is a faint indication of a few brownish dots around the apex and termen at the base of the pale ochreous cilia. Exp. al. 10—15 mm. Hindwings pale leaden grey, with a slight rufous tinge; cilia pale cinereous. Abdomen greyish ochreous. Legs whitish ochreous.

Type ♀ (25147); ♂ (25148) Mus. Wlsm.

HAB. OAHU: Waianae Mts., 2000 ft., and upwards, IV. 1892. Nine specimens, on tree-trunks.

In the hindwings the cubitus is pectinate in both sexes.

**353.** (22) *Heterocrossa distincta*, sp. nov. (Pl. XIII. fig. 5).

Antennae cinereous, basal joint whitish ochreous, with a small black spot adjacent to it above. Palpi (♀) projecting about twice the length of the head beyond it; whitish ochreous, the median joint strongly marked with black at its base beneath;



terminal joint with a fuscous band around its base. Head and Thorax whitish ochreous; the latter tinged with brownish ochreous across the middle. Forewings shining, whitish ochreous; a short basal patch running obliquely inwards from the costa is pale brownish ochreous, except on the costal margin which is black, it contains one or more patches of raised scales; beyond it is a costal spot at one-third, consisting of two lines of black (one costal, the other subcostal) running through brownish ochreous; a minute black dot of raised scales lies beneath its lower extremity, a similar but somewhat larger spot of raised brownish ochreous scales a little nearer to the base below the fold; four or five blackish costal spots form a series reaching nearly to the apex, the first very minute and reduplicated below the costa; a broad, somewhat triangular, central patch of black, outwardly edged with raised brownish ochreous scales, occupies the outer end of the cell, with two minute black dots set in brownish ochreous on the fold beneath it; a few black dots, set in brownish ochreous, faintly indicate a subterminal shade, and the narrowly brownish ochreous termen contains a series of four or five black spots at the base of the rather tawny grey cilia. Exp. al. 16 mm. Hindwings very pale, shining, leaden grey; cilia slightly paler. Abdomen pale bone-ochreous. Legs whitish ochreous, with faint darker bands on the hind tarsi and tibiae.

Type ♀ (27126) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v., (1) vi. 1894. Two specimens.

The markings on the forewings of this species are much more distinct, through being more clearly separated from each other, than in the majority of species of this genus. In the paratype the ground-colour is tinged throughout with pale brownish.

**354.** (23) *Heterocrossa cervinella*, sp. nov. (Pl. XIII. fig. 6).

Antennae cinereous, faintly banded above towards the base. Palpi fawn-brown, faintly sprinkled with fuscous beneath and externally, brownish cinereous on their inner sides. Head and Thorax brownish cinereous; the tegulae fawn-brown sprinkled with fuscous. Forewings pale fawn-brownish, mottled with darker fawn-brown on their basal half, in a curved subterminal shade, and in a series of apical and terminal spots; the costal spots are slightly tinged with fuscous; on the cell, occupying the median portion of the wing, are two greenish whitish reniform patches, more or less connected along the cell, and sprinkled around their edges with blackish scales; cilia pale fawn-brownish, mottled with a darker shade along their basal half. Exp. al. (♂) 10—18 (♀) mm. Hindwings pale leaden grey, the cilia with a slight brownish ochreous tinge. Abdomen pale leaden grey. Legs pale brownish ochreous; the hind tarsi faintly shaded above.

Type ♂ (27686); ♀ (27726) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (1) v. 1894, (4) vi. 1894; Kaholuamano, 4000 ft., (21) iv. 1895. Twenty-six specimens.

Hindwings with the cubitus pectinate in both sexes.

**355.** (24) *Heterocrossa mauii*, sp. nov. (Pl. XIII. fig. 7).

Antennae cinereous. Palpi whitish on their inner sides, externally sprinkled with brownish fuscous, the terminal joint ringed with the same. Head white. Thorax brown. Forewings rather shining, white, with the usual short, obliquely outer-margined, basal patch, brown with some raised fuscous scales; a large mottled costal triangle, also brown, with raised fuscous scales on the disc at its outer edge; its inner and outer margins also mixed with fuscous about the costa; a semi-detached spot on the upper edge of the fold precedes its lower extremity, a triangular dorsal patch at one-third, and a small dorsal spot a little beyond the apex of the costal triangle are also brown, with some admixture of raised fuscous scales; around the apex and termen a series of fuscous spots, more or less connected by brown scaling, is preceded by a broken transverse line arising from the tornus; cilia pale cinereous, faintly mottled with greyish fuscous. Exp. al. 13—15 mm. Hindwings and cilia shining, pale greyish. Abdomen greyish cinereous. Hind Legs fuscous externally, with whitish bands across the tarsal joints.

Type ♀ (28198); ♂ (28192) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (1) 2. IV. 1894, (2) v. 1896. Three specimens.

The cubitus of the hindwings is pectinate in both sexes.

**356.** (25) *Heterocrossa irrorata*, sp. nov. (Pl. XIII. fig. 8).

Antennae bone-whitish. Palpi bone-whitish above, brownish fuscous beneath. Head and Thorax bone-white; tegulae with a black spot at their base and a brownish shade beyond. Forewings bone-white, with a slight ochreous tinge; a ferruginous basal patch, incised at its outer edge in the fold, is produced along the dorsum to one-third, and thickly sprinkled throughout with blackish scales; at its lower extremity this is partially connected by a slight ferruginous shade with a triangular costal patch of the same colour, much sprinkled with scales of the pale ground-colour, and containing four small blackish costal spots with a short black streak below the outer one, and emitting from its lower extremity a narrow ferruginous line, mixed with black scales, to the dorsum beyond the middle; the subterminal shade is not strongly expressed, but a series of blackish spots mixed with ferruginous (two costal and five terminal) occurs around the apex and termen, the greyish cilia having on their basal third a tessellated appearance from shades of darker grey, corresponding with each of the dark spots, but separated from them along the termen by a slender pale ochreous line. Exp. al. 14 mm. Hindwings almost white, but with a faint bluish grey tinge; cilia faintly tinged with ochreous. Abdomen and Legs whitish ochreous.

Type ♂ (26472) Mus. Wlsm.

HAB. LANAI: 3000 ft., (2) I. 1894, 2000 ft., (1) II. 1894, (1) VII. 1894 [(1) XII. 1893 ?]. Five specimens.

Hindwings with the cubitus pectinate in the male.

A denuded female taken in December is probably referable to this species.

**357.** (26) *Heterocrossa atronotata*, sp. nov. (Pl. XIII. fig. 9).

Antennae greyish fuscous, the basal joint white. Palpi (♀) stretching nearly three times the length of the head beyond it; shining, white, shaded with fuscous beneath, and with a fuscous ring at the base of the terminal joint. Head and Thorax shining, white, the latter with a greyish fuscous shade across the middle and blackish spots at the base of the tegulae. Forewings shining, white, with a black basal patch, wider on the costa than on the dorsum, followed by a triangular black dorsal patch, its apex reaching half-way across the cell; a large black triangular mediocostal patch is interrupted by an outwardly oblique white costal streak about its middle and by white lines cutting off a spot before and a streak beyond its lower extremity; a short black dorsal streak precedes a rather broad straight black subterminal band, narrowed on the costa, but dilated towards the tornus where it is broken into black marginal spots, forming part of a somewhat confluent terminal series extending around the apex to the costa; cilia pale greyish. Exp. al. 20 mm. Hindwings and cilia pale greyish. Abdomen greyish ochreous. Legs pale greyish fuscous, the tarsal joints whitish ochreous.

Type ♀ (26526) Mus. Wlsm.

HAB. MAUI: Haleakala, 10,000 ft., IV. 1894. Unique.

**358.** (27) *Heterocrossa inscripta*, sp. nov. (Pl. XIII. fig. 10).

Antennae (♂) biciliate 3; pale brownish cinereous. Palpi white, median joint shaded laterally with brownish fuscous. Head and Thorax white; the bases of the tegulae dark brownish fuscous. Forewings rather shining, white, with a brownish fuscous triangular basal patch, wider on the costa than on the dorsum; this is followed by a larger, median, triangular fuscous costal patch, its apex reaching to the fold; this is succeeded by a narrow straight fascia of the same colour, beyond which is a small costal spot before the apex and a series of five more or less connected marginal spots along the termen, reaching to the tornus but not touching the apex; all the markings are very clearly defined; cilia pale brownish cinereous. Exp. al. 13—16 mm. Hindwings and cilia pale brownish cinereous. Abdomen brownish cinereous. Hind Legs whitish, the tarsi faintly shaded above.

Type ♂ (27477); ♀ (27476) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (2) VII. 1895; Olaa, (1) VII. 1895; Olaa, 2000 ft., (1) XI. 1896. Four specimens.

The cubitus of the hindwings is pectinate in both sexes.

**359.** (28) *Heterocrossa pusilla*, sp. nov. (Pl. XIII. fig. 11).

Antennae whitish cinereous. Palpi whitish, shaded with greyish fuscous to beyond the middle of the median joint and on the middle of the terminal joint externally. Head white. Thorax shaded with greyish fuscous. Forewings white, with a short greyish fuscous triangular basal patch, its base resting on the base of the dorsum, its apex slightly produced along the costa; a large, ill-defined, greyish fuscous triangular medio-costal patch, mottled with white, reaches to the fold, a small dorsal spot below and a little beyond its apex; a slight fuscous transverse shade, mixed with some brown scales, precedes the apex around which a slender marginal line of the same colour lies at the base of the whitish cilia. Exp. al. 9 mm. Hindwings and cilia shining, greyish white. Abdomen white, with a brownish grey tinge. Legs yellowish white.

Type ♂ (26047) Mus. Wlsm.

HAB. OAHU: Waianae Mts., above 2000 ft., IV. 1892. Two specimens.

**360.** (29) *Heterocrossa trigononotata*, sp. nov. (Pl. XIII. fig. 12).

Antennae pale mouse-colour, with a dark shade above, adjacent to the pale ochreous basal joint. Palpi (♂) projecting the length of the head beyond it; whitish ochreous, shaded beneath at the base of the median joint with chocolate-brown. Head whitish ochreous. Thorax very pale ochreous, the tegulae shaded with brown. Forewings very pale ochreous, with an oblique chocolate-brown basal patch, edged externally about the fold with raised scales; a triangular chocolate-brown medio-costal patch, interrupted by an oblique streak of the pale ground-colour before its middle, and by two smaller pale costal spots beyond its middle, at its outer edge, on the end of the cell, the chocolate-brown scales are raised and margined with very pale ochreous; nearly the whole wing-surface is more or less sparsely irrorated with ferruginous and chocolate-brown scales, which become confluent in two or three small spots about and above the middle of the fold, in a small dorsal streak beyond the middle, in a very slightly indicated subterminal shade, and in a stronger terminal shade extending around the tornus, but vanishing at the apex; cilia pale ochreous at their base, slightly shaded with grey outwardly, and tessellated with a darker shade of greyish along their basal half. Exp. al. 14—17 mm. Hindwings very pale grey; cilia inclining to ochreous. Abdomen brownish ochreous. Legs whitish ochreous, broadly banded with brownish grey shading.

Type ♂ (26087); ♀ (28707) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., (2) 5. VI. 1893; 3500 ft., (1) 17. VI. 1893; 4000 ft., (5) 9. VI. 1893, (1) VI. 1896, (1) 23. IX. 1893; forest above Pelekunu (2) 21. IX.

1893.—MAUI: Olinda (Haleakala), 4000 ft., (2) v. 1896; Haleakala, 5000 ft., (1) iv. 1896, (4) v. 1896, (7) x. 1896. Twenty-six specimens.

In some specimens the head, palpi and forewings appear to lose the creamy ochreous colour and are almost white, but the markings are precisely similar; in other specimens the chocolate-brown markings become blackish.

**361.** (30) *Heterocrossa punctulata*, sp. nov. (Pl. XIII. fig. 13).

Antennae pale cinereous. Palpi (♀) projecting scarcely more than the length of the head beyond it; ashy white, the terminal joint darkened at its base and the median joint slightly shaded beneath. Head and Thorax ashy white, the latter slightly sprinkled in the middle with brownish scales. Forewings ashy white, with a series of faint brownish fuscous costal spots and a faint costal shade at the base, beneath this is a spot of blackish raised scales; a similar small spot lies beneath the first costal spot (which is the largest of the series) at one-third, a minute black dot below the middle of the costa and a larger reduplicated spot of raised scales at the end of the cell; on either side of the fold are other raised scale-spots, and a faint brownish fuscous dorsal spot before the tornus precedes a terminal series of five blackish dots before the base of the ashy grey cilia. Exp. al. 17—20 mm. Hindwings very pale greyish, cilia slightly paler. Abdomen ashy grey. Legs whitish.

Type ♀ (26112); ♂ (28710) Mus. Wlsm.

HAB. MOLOKAI: about 4000 ft., (1) 9. vi. 1893; 4000 ft., (1) vi. 1893, (1) vi. 1896; about 4500 ft., (1) 23. ix. 1893. Four specimens.

The cubitus of the hindwings is pectinate in both sexes.

**362.** (31) *Heterocrossa achroana*, Meyr. (Pl. XIII. fig. 14).

*Heterocrossa achroana*, Meyr., Ent. Mo. Mag. xx. 31—2 (1883)<sup>1</sup>.

Antennae (♂) with very long ciliations; pale cinereous. Palpi (♂) extending the length of the head beyond it; greyish cinereous. Head and Thorax whitish, with a slight brownish ochreous tinge. Forewings whitish, much tinged with brownish ochreous, this is slightly concentrated in five or six costal spots commencing at one-third and continuing to the apex, in a small patch (partly raised) beneath the fold at about one-fourth from the base, in a spot (also somewhat raised) at the end of the cell, in a subterminal transverse shade and in a narrow broken shade along the termen; the spot at the end of the cell is more greyish than the other markings, all of which are very obscure, and there are a few raised scales also above the fold near the base; cilia pale brownish grey. Exp. al. 16—18 mm. Hindwings pearly whitish, with a slight ochreous

tinge in the cilia. Abdomen shining, pale brownish ochreous. Legs whitish, with slight transverse grey tarsal shading.

Type ♀ Mus. Meyr. [Caenotype ♂ (27415) Mus. Wlsm.]

HAB. HAWAII: Mauna Loa, (2) 4000 ft., (Blackburn)<sup>1</sup>; Mt. Kilauea, (3) VII. 1895, (5) VIII. 1896 (Perkins). Ten specimens.

In some specimens the spot at the end of the cell is more conspicuous and almost fuscous in colour, the other markings being almost entirely obliterated. Mr Meyrick's two specimens are before me, both are females (not male and female) but in a much worn and bleached condition. In the hindwings the cubitus is pectinate in both sexes.

**363.** (32) *Heterocrossa solutella*, sp. nov. (Pl. XIII. fig. 15).

Antennae drab-white. Palpi cream-white, the basal half of the median joint shaded with fuscous externally, terminal joint annulate with fuscous. Head and Thorax white. Forewings drab-white, with a slight sprinkling of fuscous scales; an elongate brownish patch at the base of the costa is followed by two small costal spots, one before and one behind the middle, forming, together with an elongate fuscous patch on the outer half of the cell, the outline of a large costal triangle; the termen is shaded with brownish fuscous, an indistinct parallel shade-line preceding it; cilia drab-whitish, slightly shaded on their basal half. Exp. al. 11 mm. Hindwings and cilia sericeous white. Abdomen and Legs cream-white.

Type ♀ (27416); ♂ (27475) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (5) VII. 1895, (2) VIII. 1895; Kona, 2000 ft., (1) IX. 1892, 3000 ft., (3) IX. 1892; Kaawaloa (Kona), above 2000 ft., (1) IX. 1892. Twelve specimens.

In some varieties the apex of the costal triangle is indicated by a somewhat more developed fuscous shade-spot on the outer end of the cell, and in others this spot is divided into two smaller ones placed one above the other.

**364.** (33) *Heterocrossa gracillima*, sp. nov. (Pl. XIII. fig. 16).

Antennae pale greyish fuscous. Palpi (♀) projecting scarcely more than the length of the head beyond it; ashy white, shaded with greyish fuscous externally throughout their length, the terminal joint banded with greyish fuscous. Head and Thorax ashy white. Forewings ashy whitish, slightly paler towards the costa along which runs a very narrow shade of pale greyish fuscous, in which a series of darker costal spots is faintly visible; there is a minute spot at the end of the cell and a series of five blackish terminal dots before the base of the very long pale greyish fuscous cilia which are

delicately dusted with ashy white. Exp. al. 10—14 mm. Hindwings very pale grey; cilia pale cinereous. Abdomen brownish ochreous. Legs whitish, the tarsi faintly banded with pale greyish ochreous.

Type ♀ (26556) *Maui*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (5) IV. 1895; Mts., 3000—4000 ft., (4) VI. 1894.—MOLOKAI: 3000 ft., (1) VI. 1893.—MAUI: Haleakala, 5000 ft., (2) III. 1894; below 4000 ft., (1) V. 1896.—HAWAII: Kona, 4000 ft., (2) 4—17. VIII. 1892. Fifteen specimens.

In some specimens a blackish dot is visible at the end of the cell and another before it slightly above the fold; other minute dots are occasionally present.

## V. TORTRICIDAE.

### 1. OLETHREUTINAE.

#### 37. ECCOPTOCERA, gen. nov.

(ἐκκόπτω = I cut; κέρας = a horn.)

Type *Steganoptycha foetorivorans*, Btl.

Antennae (♂) with an excised notch above beyond the basal joint; very shortly biciliate. Palpi extending fully the length of the head beyond it, somewhat roughly clothed; terminal joint smooth, porrect. Head slightly roughened above and in front. Thorax smooth. Forewings with the costa slightly arched, apex depressed, termen sinuate, slightly oblique; ♂ with a strong costal fold extending fully to the middle: neuration 11 veins (vein 6 obsolete); 7 and 8 stalked, 7 to termen; 3 and 4 strongly bent up towards the termen; 2 much bent. Hindwings broader than the forewings, slightly sinuate below the apex; with a narrow fold along the limbus beneath, making the flexus very distinct and prominent: neuration 7 veins; 3 and 4 coincident; 5 and (3 + 4) connate; 6 and 7 stalked. Legs, hind tibiae with densely packed closely appressed scales above.

*Eccoptocera* comes nearest to *Holocola*, Meyr., but is distinguished by its notched antennae; *Heligmocera*, Wlsm., differs in the antennae having a sinuation extending over several joints, instead of a notch, and veins 3 and 4 of the hindwings are stalked. *Strepsicrates*, Meyr., has a notch in the antennae, but it is at about one-fifth from the base, and veins 7 and 8 of the forewings are separate. *Bathrotoma*, Meyr., has a notch immediately above the basal joint of the antennae, but veins 7 and 8 of the forewings are separate. *Proteopteryx*, Wlsm., differs in not having the antennae notched, in having veins 7 and 8 of the forewings separate and 3 and 4 of the hindwings stalked. All these

genera have twelve veins in the forewings and possess costal folds in the ♂, others belonging to this group, e.g. *Palaeobia*, Meyr., are easily separable from the genera mentioned by the absence of the costal fold.

The only allied genus which agrees with *Eccoptocera* in having only eleven veins in the forewings, a costal fold and notched antennae, is *Hendecasticha*, Meyr., but while *Eccoptocera* has 7 and 8 stalked and 6 obsolete *Hendecasticha* has 7 and 8 coincident—and therefore no stalked apical veins.

The coincidence of veins 3 and 4 of the hindwings (an unreliable character among the species of these genera) appears to be maintained throughout the long series of Hawaiian specimens.

**365.** (1) *Eccoptocera foetorivorans*, Btl. (Pl. X. figs. 12—14).

*Steganoptycha foetorivorans*, Btl., Ann. & Mag. NH. (5. s.) VII. 394—5, No. 27 (1881)<sup>1</sup>.

Antennae stone-grey, varying to greyish fuscous of a paler or darker shade. Palpi varying from cinereous to fuscous. Head stone-grey, cinereous or dark fuscous. Thorax greyish fuscous, sometimes stone-grey. Forewings whitish cinereous, speckled with tawny fuscous, a dark tawny fuscous median streak runs from the middle of the base to the apex, covering the first half of the fold, and thence diverted upward sending a projecting angle to the costa before its middle and extending along the upper edge of the cell and beyond it in the same line nearly to the apex (this is sometimes broken up, either before or beyond the middle, or in both places, leaving, especially in some of the darker varieties, a short dorso-basal patch, a larger median patch attaining to the middle of the costa, and an anteternal dorsal patch more or less connected with the apical shading: in three specimens, of which a pair were taken *in cop.*, the darker markings become almost entirely obliterated, with the exception of the sinuate terminal shade, the dividing lines between the costal streaks, a faint anteternal patch, and a still fainter median shade); on the base of the costa is a strong fold extending nearly to the middle, and beyond the middle are eight short whitish costal streaks in four pairs, varying in definition and distinctness but always traceable; a narrow tawny fuscous shade descends from the apex along the upper half of the sinuate termen; cilia whitish cinereous, shaded with tawny fuscous at the apex and along their outer half (in the darker forms becoming entirely suffused with fuscous, and in the paler ones almost losing the outer shade). Exp. al. 16—19 mm. Hindwings brassy brown (varying in the intensity of their colouring and becoming in some specimens dark tawny brown), cilia scarcely paler. Abdomen varying from pale grey to brown and dark brownish fuscous. Legs cinereous (varying to brownish fuscous), with strong tarsal annulations.

Larva "spinning together leaves of a tree unknown to me by name. The tree in question superficially resembles box; but the leaves are somewhat larger, and have a strong, rather unpleasant smell" (Blackburn)<sup>1</sup>.



Type (66 : 81. 7) *Oahu*, Mus. Br.

HAB. KAUAI: Kaholuamano, 4000 ft., (8) IV. 1895; Mts., 3000—4000 ft., (1) V. 1894, (6) VI. 1894; Lihue, 4000 ft., (1) VII. 1896 (Perkins).—OAHU: Mts., (Blackburn)<sup>1</sup>; Waianae Mts., 2000 ft., (2) IV. 1892; Mts., near Honolulu, 2000 ft., (♂ and ♀ *in cop.*) 1896 (Perkins).—MOLOKAI: 3000 ft., (1) VI. 1896; above 3000 ft., (2) 13—24. VI. 1893; 4000 ft., (4) VI. 1896, (5) 13—23. IX. 1893 (Perkins).—LANAI: 2000 ft., (1) XII. 1893, (1) I. 1894, (3) II. 1894 (Perkins).—MAUI: Haleakala, 5000 ft., (12) V. 1896, (8) X. 1896 (Perkins).—HAWAII: Kona, 3000 ft., (4) VI. 1892; ? ft., (3) VII. 1895; 2000 ft., (2) IX. 1892; ? ft., (1) I. X. 1892; Mt. Kilauea, ? ft., (1) VIII. 1896; Oloa, ? ft., (1) IX. 1896; Hilo, 2000 ft., (1) XII. 1895 (Perkins). Seventy specimens.

This is a most variable species, but having regard to the equally divergent series of *Proteopteryx emarginana*, Wlsm., from California, and of *Strepsicrates ejectana*, Wkr., from Australia, both more easily separable by their generic characters than by their patterns or colouring from the subject before me, I cannot regard any of the numerous forms included in Mr Perkins' various consignments as entitled to special distinction.

### 38. CROCIDOSEMA, Z.

Type *Crocidosema plebeiana*, Z. (Z. 1847).

CROCIDOSEMA, Z., Is. 1847, 263; Stgr.-Wk., Cat. Lp. Eur. 263, No. 131 (1871); Stgr.-Rbl., Cat. Lp. Pal. II. 110, No. 248 (1901).

Dr. Butler [Ann. & Mag. NH. (5. s.) VII. 393—4 (1881)] used the name *Proteopteryx*, Wlsm., in connection with *Crocidosema plebeiana*, Z. (= *Proteopteryx blackburnii*, Btl.) and having some recollection of the circumstances I fear I must hold myself partially responsible for the error. The superficial resemblance to *Proteopteryx emarginana*, Wlsm., then fresh in my mind, was so strong that without a careful examination of structural characters (for which I had no opportunity) the opinion then expressed appeared at the time to be justified.

### 366. (1) *Crocidosema plebeiana*, Z. (Pl. X. fig. 15).

n. syn. = *blackburnii*, Btl. ♂ (et. var., Btl. ♀).

*Crocidosema plebeiana*, Z., Is. 1847, 721—2; Stgr.-Wk., Cat. Lp. Eur. 263, No. 1269 (1871)<sup>1</sup>, etc.

*Proteopteryx blackburnii*, Btl., Ann. & Mag. NH. (5. s.) VII. 393—4, No. 26 (1881)<sup>2</sup> ♂.

*Proteopteryx blackburnii*, Btl., var., Btl., Ann. & Mag. NH. (5. s.) VII. 394 (1881)<sup>2</sup> ♀.

*Crocidosema plebeiana*, Meyr., Pr. Lin. Soc. NSW. VI. 659—60 (1881)<sup>3</sup>; Wlsm., Pr. Z. Soc. Lond. 1897, 127, No. 174<sup>4</sup>; Stgr.-Rbl., Cat. Lp. Pal. II. 110, No. 1968 (1901)<sup>5</sup>.

HAB. EUROPE<sup>1, 3, 4-5</sup> [larva *Althea rosea*, *Lavatera arborea*, IX.—II. Imago II.—V., IX.<sup>4</sup>]. AUSTRALIA<sup>3, 4-5</sup>. WEST INDIES<sup>4</sup>. CENTRAL AMERICA<sup>5</sup>. SOUTH AMERICA<sup>5</sup>. BRAZIL<sup>4</sup>: PERU<sup>4</sup>; ARGENTINA<sup>4</sup>. HAWAIIA. KAUAI: Kaholuamano, 4000 ft., IV. 1895 (Perkins).—OAHU: Waialua beach, II. 1893; Waianae Mts., 2000 ft., IV. 1892 (Perkins).—MOLOKAI: above 3000—4000 ft., 9—13. VI. 1893 (Perkins).—LANAI: 2000 ft., VII. 1894 (Perkins).—MAUI: Makawao (Blackburn)<sup>2</sup>; Haleakala, 5000 ft., V. 1896 (Perkins).—HAWAII: Hualalai (Kona), 5000 ft., VI. 1892 (Perkins). Twenty-six specimens.

The specimens of *Proteopteryx blackburnii*, Btl., in the British Museum and in Mr. Blackburn's collection are *Crocidosema plebeiana*, Z., a species which will probably be found to have even a wider distribution than has yet been recorded.

### 39. GYPSONOMA, Meyr.

GYPSONOMA, Meyr., HB. Br. Lp. 481 (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 112, No. 250 (1901).

#### 367. (1) *Gypsonoma leprarum*, sp. nov. (Pl. X. fig. 16).

Antennae whitish ochreous, slightly shaded above. Palpi roughly clothed above and beneath, whitish ochreous; terminal joint short, depressed, brownish. Head whitish ochreous. Thorax whitish, tinged with ochreous and mottled with fawn-brown. Forewings whitish, with an ochreous tinge; a narrow band of pale fawn-brown at about one-fourth tends obliquely outward to the fold, below which it is deflexed to the dorsum, forming the outer edge of a brownish fuscous dorsal patch; after a band of the pale ground-colour a broad costal shade, commencing before the middle, extends to the apex, it consists of different shades of brown streaking, varying from light fawn to brownish fuscous, and is broken by five pairs of geminate whitish ochreous costal streaklets; the first pair, about the middle, very close together; the second pair farther apart, all tending obliquely outward and ending in leaden grey lines; the outer pair, before the apex, broader and more conspicuous than the others and decidedly less oblique; the dark brown colouring about the apex is attenuated downward along the termen and within it are two blackish dots forming part of a pale ocelloid patch on the inner side of which is some fawn-brown shading above and before the tornus; cilia whitish, profusely speckled with fuscous and tipped with fawn-brown. Exp. al. 12 mm. Hindwings and cilia pale rosy grey. Abdomen pale brownish ochreous. Legs whitish ochreous.

Type ♀ (26256); ♂ (26255) Mus. Wlsm.

HAB. MOLOKAI: sea-level, V. 1893. Two specimens.

In the ♂, which is in poor condition, the costal shade is much less intense—partly through denudation.

## 40. ADENONEURA, gen. nov.

(ἀδὴν = a gland ; νῆρον = a nerve.)

Type *Adenoneura falsifalcellum*, Wlsm.

Antennae (♂) simple. Palpi somewhat slender, extending less than the length of the head beyond it; median joint somewhat recurved, terminal joint short, porrect. Head thickly clothed. Thorax smooth. Forewings (♂) without a costal fold; costa slightly arched, apex obtusely angular, termen sinuate, not oblique, tornus rounded: neuration 12 veins, all separate, 7 to termen. Hindwings rather broader than the forewings, scarcely sinuate; ♂ with a strong glandular fold on the underside on vein 1<sup>c</sup>, extending nearly its whole length: neuration 8 veins; 3 and 4 stalked, 5 slightly approximated to 4 at base; 6 and 7 separate, but tending to coincide towards their base. Abdomen somewhat stout. Legs smooth.

This genus, with *Prionoglossa*, Wlsm., and *Piloptyx*, Wlsm., form a group allied to *Thiodia*, Hb., from which they differ in possessing abnormal structures in the hindwings.

368. (1) *Adenoneura falsifalcellum*, sp. nov. (Pl. X. fig. 17).

Antennae brownish cinereous. Palpi pale cinereous. Head and Thorax brownish cinereous. Forewings pale brownish cinereous, tending to a lighter shade below the fold, streaked and mottled with ferruginous and dark chestnut-brown; a series of alternately broad and narrow streaks along the costa, tending obliquely outward, those beyond the middle produced in ferruginous lines toward the termen; a large ferruginous and chestnut-brown patch is placed obliquely about the middle of the wing, its base resting on the fold, below which is a small double patch of black scales, its outer margin bounded by whitish scaling, especially about the end of the cell, accompanied and followed by shades of bluish grey reverting above in short streaks toward the middle of the costa; a triangular ferruginous patch at the extreme apex is bounded internally by a narrow whitish cross-line and externally by the shining white cilia on the upper half of the termen, below it is a curved dark umber-brown shade, extending over the lower half of the termen and its cilia to the tornus, bounded on its inner side by the curved silvery grey outer band of an indistinct ocelloid patch containing three dentate blackish spots on its outer half. Exp. al. 18—21 mm. Hindwings dark greyish brown, with a greenish iridescence; cilia pale cinereous, with a greyish brown line running through them near their base. Abdomen greyish brown, shaded with fuscous. Hind Legs whitish ochreous, the tarsi banded with greyish fuscous.

Type ♂ (27506) Mus. Wlsm.

HAB. HAWAII: Oloo, (1) VII. 1895, 2000 ft., (6) XI. 1896. Seven specimens, all ♂♂.

In some specimens the ferruginous and chestnut-brown, obliquely placed, patch extends to the base of the wing along the costa and fold, forming a conspicuous dark costal triangular patch, the remainder of the wing, with the exception of the anteterminal dark shading, varying from pale ochreous to brownish ochreous.

The strongly falcate appearance of this species is not structural but is caused by the apical markings.

**369.** (2) *Adenoneura* ? *marcidellum*, sp. nov. (Pl. X. fig. 18).

Antennae brownish fuscous. Palpi brown, shaded with fuscous externally. Head brown. Thorax fawn-brownish, with a dark fuscous patch posteriorly. Forewings fawn-brownish, with a dark fuscous basal patch to one-third, angulated outward on the fold, its basal and costal portion mottled with the paler ground-colour; a large creamy white oblique trapezoidal dorsal patch extends over the fold emitting a reduplicated pale band, on its inner side, which reverts to the costa bounding the basal patch; this band is margined by a brownish fuscous shade along its outer side which covers the end of the cell throwing a branch to the apex, along the upper edge of the ocelloid patch, and another along its inner edge to the dorsum; the costa is marked with alternate broad and narrow brownish fuscous streaks, the latter somewhat less oblique than the former, separated by pale marginal spots of which two before the dark brownish fuscous apex are more conspicuous than the others; the ocelloid patch contains a brownish centre with three short dark fuscous transverse streaks set on a ground of rather shining, greyish scales, the space between this and the terminal cilia being also brown; cilia brownish ochreous. Exp. al. 20 mm. Hindwings dark brownish grey, with paler cilia. Abdomen dark brownish grey. Legs whitish ochreous, with greyish tarsal bands.

Type ♀ (25001) Mus. Wlsm.

HAB. OAHU: Waianae Mts., IV. 1892. Unique.

In the absence of the ♂ the genus cannot be determined with certainty.

**370.** (3) *Adenoneura* *plicatum*, sp. nov. (Pl. X. fig. 19).

Antennae greyish ochreous, faintly banded above with brownish cinereous. Head and Palpi hoary greyish. Thorax brownish grey, speckled with pale cinereous. Forewings dull brownish olivaceous, profusely speckled with shining pale cinereous, breaking into a long series of indistinct closely packed oblique costal streaks; an ocelloid patch above the tornus contains four elongate black spots and is bounded on its outer side by shining leaden grey, of which there is also a slight suffusion before it and obliquely across the outer end of the cell; cilia tawny grey, a brownish marginal line along their base. Exp. al. 17—20 mm. Hindwings (♂ with a strong glandular fold from the base beneath along vein 1<sup>c</sup>) brownish grey, with paler cilia. Abdomen brownish grey. Legs inclining to ochreous.

Type ♂ (25717); ♀ (25615) Mus. Wlsm.

HAB. HAWAII: Hualalai, (Kona), summit of crater, 8000 ft., (1) 15. VIII. 1892; Kona, 4000 ft., (1) 13. VIII. 1892, above 6000 ft., (1) 30. VIII. 1892; Mt. Kilauea, ? ft., (1) XII. 1896; Mauna Loa, 4000 ft., Larva in seeds of native *Acacias* (Perkins 1 : 1900). Five specimens.

The ♀ is in very poor condition.

**371.** (4) *Adenoneura latifemoris*, sp. nov. (Pl. X. fig. 20).

Antennae greyish fuscous. Palpi and Head hoary cinereous. Thorax greyish fuscous, sprinkled with pale cinereous. Forewings olive-brownish, profusely dusted with leaden grey, on the basal third obliterating the ground-colour, beyond one-third this is broken up into a series of about seven indistinct, oblique, shining, leaden grey costal streaks, of which the last before the apex meets the lower extremity of the one preceding it; on the middle of the dorsum arises an outwardly oblique, broad, shining, leaden grey dorsal streak, overflowing the end of the cell and reverting thence towards the tornus, but again angulated upward before reaching it and ultimately recurved inward at its apex; the antetornal space which it encloses is sprinkled with black scales, a few other small black scale-patches occur above and beyond it and a terminal line of black scales along the base of the shining, tawny grey cilia. Exp. al. (♂) 13—15 (♀) mm. Hindwings (♂ with a strong fold beneath on vein 1<sup>c</sup>) greyish brown with paler cilia. Abdomen fuscous, whitish beneath. Legs pale cinereous, hind tarsi with tawny greyish bands.

Type ♀ (28127) *Maui*; ♂ (28665) *Hawaii*, Mus. Wlsm.

HAB. MAUI: Haleakala, crater (♀) x. 1896.—HAWAII: Hualalai, summit of crater, 8000 ft., (♂ ♀) 15. VII. 1892. Three specimens.

The ♂ is smaller than the ♀, with rather less black scaling, especially along the termen, and with the leaden grey markings indistinct and less continuous, being broken into spots indicating the direction of the lines described in the ♀. Both sexes occurred at the summit of Hualalai but the ♀ is in poor condition.

**372.** (5) *Adenoneura montanum*, sp. nov. (Pl. X. fig. 21).

Antennae pale brownish cinereous. Palpi not extending beyond the head; pale brownish cinereous, the short terminal joint fuscous at the base. Head brown. Thorax brownish, thickly dusted with pale cinereous. Forewings dull chestnut-brown, profusely reticulated (to the extent of suffusion) with light brownish cinereous, forming a series of geminated costal strigulae; an ocelloid spot above the tornus contains about four black scale-points and is bounded before and behind by a V-shaped leaden grey shade; the termen beyond it is dull chestnut-brown and a darker brown line runs along the base of

the tawny brownish cilia. Exp. al. 10—12 mm. Hindwings (♂ with a glandular fold beneath on vein 1<sup>c</sup>) brownish fuscous; cilia brownish cinereous, with a shade-line near their base. Abdomen fuscous. Legs pale brownish cinereous, the last three tarsal joints with fuscous spots.

Type ♂ (27483); ♀ (25275) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, (7) VII. 1895, (1) VIII. 1895, (1) VIII. 1896; Kona, 4000 ft., (1) 10. VIII. 1892, (1) 8. IX. 1892. Eleven specimens.

**373.** (6) *Adenoneura rufipennis*, Btl. (Pl. X. fig. 22).

*Phoxopteris rufipennis*, Btl., Ann. & Mag. NH. (5. s.) VII. 395, No. 28 (1881)<sup>1</sup>.

Antennae brownish ochreous. Palpi brownish ochreous. Head and Thorax pale reddish brown. Forewings brownish ochreous, profusely striated throughout with reddish brown and leaden grey, the latter in slender streaks running obliquely outward from the costa and forming some leaden grey spots about the end of the cell, and on either side of the ocelloid patch, above the tornus, which contains three black dots, the apex and upper half of the termen reddish brown; cilia leaden grey, mixed with brownish ochreous. Exp. al. 10 mm. Hindwings (♂ with a glandular fold beneath on vein 1<sup>c</sup>) brownish grey; cilia pale cinereous. Abdomen brownish grey. Legs brownish grey, with pale tarsal bands.

Type (109: 81. 7) *Oahu*, Mus. Br. [Caenotype ♀ (25097); ♂ (25094) *Oahu*, Mus. Wlsm.]

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Lihue, 4000 ft., (1) VII. 1896 (Perkins).—OAHU: (Blackburn)<sup>1</sup>; Waianae Mts., 2000 ft., (7) IV. 1892; Halemano, about 2000 ft., (1) XII. 1892 (Perkins).

Beaten from "Koa" (*Acacia koa*) and "Lehua" (*Metrosideros polymorpha*), Perkins MS.

**41.** CRYPTOPHLEBIA, Wlsm.

Type *Cryptophlebia carpophaga*, Wlsm. (India).

CRYPTOPHLEBIA, Wlsm., Ind. Mus. Notes IV. 105 (1899).

Antennae (♂) moderately stout, simple, about half the length of the forewings. Palpi short, stout, projecting scarcely half their length beyond the head; terminal joint short, depressed; median joint thickly clothed above and below with closely packed scales, giving a somewhat triangular appearance. Head thickly clothed above. Thorax stout, smooth. Forewings about twice as long as broad, costa scarcely convex, termen oblique, tornus rounded, dorsum somewhat abruptly angulated near the base: neuration 12 veins,

2 from a little beyond middle of cell; 3, 4, and 5 closely approximate at the lower angle of cell; 7 and 8 separate, enclosing the apex. Hindwings (♂) about as broad as the forewings, triangular, apex depressed, limbus shortened, very hairy; with a pouch-like fold along vein 2, containing a thick tuft of scales on the upper side, accompanied by some strongly curved scales on the underside along the margin: neuration 8 veins; ♂ with vein 2 concealed in the tuft of scales; 3 and 4 separate, but very closely approximate; 5 closely approaching 6 at the outer margin; 6 and 7 normal, but somewhat bent downwards at their origin; 8 free: ♀ with 3 and 4 stalked. Abdomen densely hairy above. Legs, all the tibiae thickly tufted, first tarsal joints of the hindlegs also tufted.

This genus comes into the same group as *Platypeplum*, Wlsm. (=†*Platypeplus*, Wlsm.) and *Ecdytolopha*, Z.

**374.** (1) *Cryptophlebia illepida*, Btl. (Pl. X. figs. 23—25).

374<sup>a</sup>. (1<sup>a</sup>) *illepida*, Btl. + *illepida*, Btl. (Pl. X. fig. 23).

= *Teras illepida*, Btl., Tr. Ent. Soc. Lond. 1882, 42, No. 14.

Antennae, Palpi, Head and Thorax reddish fawn; the last shaded with greyish fuscous above and at the ends of the tegulae. Forewings pale fawn-reddish, with indistinct transverse waved greyish fuscous striae, and a few dots of blackish scales, a minute dot of white scales at the end of the cell, the dorsum near the base also sprinkled with blackish scales; before the tornus is a ferruginous triangular patch, sprinkled with blackish scales which run through the tornal cilia; cilia reddish fawn, somewhat mottled with greyish fuscous. Exp. al. (♂♀) 18—22 (♀) mm. Hindwings greyish fuscous, ♂ with dark fuscous scales in the fold; cilia of the ♂ whitish, of the ♀ brownish grey, with a dark line running through them near their base; underside strongly mottled. Abdomen greyish fuscous, anal tuft pale cinereous. Legs pale cinereous.

Type (99: 81. 7) *Oahu*, Mus. Br. [Caenotype ♂ (25231) *Hawaii*; ♀ (25003) *Oahu*, Mus. Wlsm.]

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>, bred from seeds of *Acacia farnesiana* (Perkins); Waialua, coast, III. 1901; Waianae Mts., 2000—3000 ft., IV. 1892; Koolau Range, VII.—VIII. 1901 (Perkins).—HAWAII: Kona, 4000 ft., 17. VIII. 1892 (Perkins).

374<sup>b</sup>. (1<sup>b</sup>) *illepida*, Btl. + *fulva*, var. nov. (Pl. X. fig. 24).

Antennae, Palpi, Head and Thorax, varying from reddish fawn to dark tawny brownish. Forewings varying from reddish fawn to dark tawny brownish; with a basal patch covering nearly one-third of the wing-length, strongly angulated outward a little above the fold; this patch is fawn-grey, or fawn-brownish, mixed with greyish or brownish fuscous, the latter prevailing toward its outer edge, with some costal streaklets within it; beyond is an oblique transverse band from the middle of the costa, running in the direction of a triangular reddish brown antetornal spot, its edges sinuate, its colour, for

the most part, tawny greyish fuscous, with a minute dot of white scales at the end of the cell; a somewhat similar band occurs before the apex, reaching to the middle of the termen, the apical space beyond it reddish fawn, slightly darker than the space preceding the band, which like the middle of the dorsum is of a paler shade faintly reticulated; cilia greyish fuscous, tipped with pale fawn. Exp. al. ♂ 17; ♀ 18—22 mm.

Type ♂ (25183); ♀ (25649) *Hawaii*, Mus. Wlsm.

HAB. OAHU: Honolulu, (4) bred from seeds of *Acacia farnesiana*; S.E. Koolau Range, (3) VII. 1900.—HAWAII: Kaawaloa (Kona), 1500 ft., (1) VI. 1892, (1) IX. 1892; Mt. Kilauea, (1) VII. 1895; Kona, 4000 ft., (4) 8—17. VIII. 1892, (1) IX. 1892. Fifteen specimens.

In some specimens (♀♀) the darker colour suffuses the wing obscuring the markings, but the antetornal triangular patch is always distinct.

374<sup>c</sup>. (1<sup>c</sup>) *illepida*, Btl. + *suffusa*, var. nov. (Pl. X. fig. 25).

Antennae and Palpi dark brown. Head greyish fuscous. Thorax dark greyish fuscous above, reddish brown posteriorly, the tegulae reddish brown tipped with greyish fuscous. Forewings dark reddish brown, fading to fawn-brownish along the dorsum below the fold; a broad brownish fuscous suffusion, above the fold, extends from near the base to the lower half of the termen, reaching upward to the costa, but leaving the reddish brown apex unclouded; on this some geminated brown costal streaks are visible, and three or four white scales occur in a group at the end of the cell; on the dorsum before the tornus is a dark reddish brown triangular patch transversely streaked with fuscous; cilia tessellated with reddish brown and greyish fuscous. Exp. al. 21 mm.

Type ♂ (25184) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., IX. 1892. Unique.

Closely allied to *Cryptophlebia carpophaga*, Wlsm. [Ind. Mus. Notes IV. 105—6, Pl. IV. 1<sup>a-d</sup> (1899): v. 121, Pl. XV. 2, 2<sup>a-b</sup> (1903)], but one noticeable difference is that the shade which arises from the dorsum is distinctly more oblique and further removed from the antetornal spot than in the Indian species; moreover, in such specimens as possess a transverse anteapical shade, this assumes the appearance of a somewhat widened band rather than of a narrow curved line. The larva of *C. carpophaga* feeds in the pods of *Cassia fistula* and *occidentalis*, and also on seeds of *Nephelium litchi*.

The genus *Cryptophlebia* will probably be found to be widely distributed as *C. citrivora*, Wlsm., is injurious to the fruits of *Citrus* in Natal and *Arotrophora ombrodelta*, Lwr. & Frgt. (which must also be removed to *Cryptophlebia*) feeds in New South Wales on the seeds of *Acacia farnesiana*, like *illepida*, Btl., of which Perkins writes “♂ any colour, ♀ not variable,” but I find the ♀ very variable and until the larvae have been studied the number of species must be doubtful.



**375.** (2) *Cryptophlebia tetrao*, sp. nov. (Pl. X. fig. 26).

Antennae brownish cinereous. Palpi cinereous, the terminal joint ferruginous. Head and Thorax cinereous, the latter mottled with reddish brown. Forewings whitish cinereous, shaded and speckled with tawny grey and reddish ferruginous, the first forming an indistinct central band which terminates at the tornus in a bright reddish ferruginous spot containing some black scales, a smaller spot being indicated in the middle of the fold and also speckled with the same; some tawny grey shading, before the apex, is much mixed with bright reddish ferruginous which is strongly indicated about the extreme apex and upper half of termen; cilia dark tawny grey, mixed with reddish ferruginous. Exp. al. 14—16 mm. Hindwings brownish grey, with slightly paler cilia; with some similarly paler scales in a tuft on the glandular swelling on vein 1°. Abdomen greyish; anal tuft inclining to ochreous. Legs whitish ochreous, hind tarsi banded above with tawny grey.

Type ♂ (25224) Mus. Wlsm.

HAB. HAWAII: Kona, 3500 ft., 25—29. VI. 1892. Two specimens.

Both specimens are in poor condition, but the species is obviously distinct.

**376.** (3) *Cryptophlebia vulpes*, sp. nov. (Pl. X. fig. 27).

Antennae reddish brown. Palpi tawny reddish. Head and Thorax reddish brown, the latter with a fuscous blotch posteriorly. Forewings reddish brown, faintly mottled with pale cinereous; an oblique, transverse, median fascia of the darker ground-colour, with a minute white dot on the middle of its outer side, is indistinctly indicated as also two or three costal spots before the apex, a triangular patch of black scales beyond the cell, its narrow apex resting on the lower half of the termen; a small black spot beyond its base almost at the apex; cilia reddish brown, mixed with black scales. Exp. al. 12 mm. Hindwings brownish grey; with a glandular fold, on the outer half of vein 1° beneath, having some black scales at its termination; cilia greyish. Abdomen greyish, mixed with fuscous. Legs pale cinereous, the last tarsal joints faintly spotted.

Type ♂ (27465) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1895. Unique.

**42.** ENARMONIA, Hb.

Type *Tortrix woeberiana*, Schiff (Stph. 1852).

ENARMONIA, Hb., Verz. bek. Schm. 375 (1826); Stph., Ill. Br. Ent. Haust. IV. 120—1, 418 (1834); List, Br. An. BM. x. Lp. 49 (1852); Meyr., HB. Br. Lp. 472 (1895); Wlsm., Pr. Z. Soc. Lond. 1897, 122, No. 59.

**377.** (1) *Enarmonia* (?) *conspicua*, sp. nov. (Pl. X. fig. 28).

Antennae brownish cinereous. Palpi projecting slightly beyond the head; fawn-whitish, shaded with fuscous externally. Head and face whitish, with a rust-brown collar between the head and the dirty fawn-whitish Thorax which is not tufted. Forewings, costa slightly arched beyond the middle, apex obtuse, termen scarcely sinuate, obliquely rounded; fawn-whitish, conspicuously marked with rust-brown; a large triangular rust-brown costal patch from base to two-thirds, overlapping the fold, is strongly tinged with fuscous along its lower margin and in a projecting excrescence before the lower angle of the cell, pointing toward the tornus; two small rust-brown costal spots beyond it are followed by an apical shade of the same colour, which extends to the lower half of the termen, where it is preceded by three blackish dots, accompanied by obscure leaden grey scales forming an ocelloid spot above the tornus; cilia pale tawny fawn, mixed with fuscous on the middle of the termen and at the apex. Exp. al. 22 mm. Hindwings and cilia brownish grey. Abdomen brownish grey. Legs cinereous, with fuscous tarsal bands.

Type ♀ (28134) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., x. 1896. Unique.

In the absence of the ♂ the genus cannot be determined with certainty.

**378.** (2) *Enarmonia walsinghami*, Btl. (Pl. XI. fig. 1).

*Proteopteryx walsinghamii*, Btl., Tr. Ent. Soc. Lond. 1882, 43 (1882)<sup>1</sup>.

Antennae pale brownish cinereous. Palpi pale cinereous, shaded nearly to the end of the median joint with fuscous in the darker varieties. Head pale cinereous. Thorax cinereous, a broad band across the base of the tegulae in some pale forms. Forewings, ♂ olive-grey, with a greenish tinge, blending to olive-brown in a series of oblique costal streaks and in a dorsal patch beyond the middle as also in a narrower dorsal patch before the middle; the costal streaks, to the number of about nine, are fuscous at their base, the bases of those beyond the middle being triangular and there is a strong fuscous shade along the middle of the wing, widening outward from the base to the termen; an indistinctly indicated ocelloid patch, above the tornus, is bounded by pale steel-grey and contains three ill-defined black streaklets; a dark line runs along the base of the greyish fuscous cilia: ♀ whitish, thickly mottled and blotched with rich olive-brown and dark umber-brown on the basal two-thirds and about the apex and termen, leaving a conspicuous white patch crossing the end of the cell; the dark umber-brown is distributed from the base along the first half of the fold in an elongate patch on the outer half of the cell and in a series of costal streaks, of which one at about one-fifth from the base and another a little before the middle are produced obliquely

downwards, being thus longer and more conspicuous than the others; there is an umber-brown spot at the apex, mixed with olive-brown, and a shade of the same mixture along the lower half of the termen, thence slightly inverted upward, the intermediate spaces between the dark umber markings and along the dorsum are filled up with rich olive-brown, in which the whitish ground-colour scarcely appears before the end of the cell, except to partially isolate a large quadrate olive-brown dorsal patch before the tornus, beyond which an ill-defined ocelloid patch is outwardly bounded by shining, silvery scales; the dark costal streaks on the outer half of the wing are distinctly separated by white, and some pale olivaceous-brown shading precedes the darker terminal shade on the white ground-colour; cilia transversely mottled with umber-brown and olive-brown, becoming whitish above the tornus. Exp. al. ♂ 11—14; ♀ 11—18 mm. Hindwings, ♂ greyish fuscous; cilia pale greyish cinereous: ♀ brownish cinereous; cilia paler, a dark shade running through them near their base in both sexes. Abdomen, ♂ fuscous: ♀ brownish cinereous. Legs, ♂ greyish cinereous: ♀ brownish cinereous, hind tarsi whitish.

Type (161: 81. 7) *Oahu*, Mus. Br. [Caenotype ♂ (28075); ♀ (25765) *Hawaii*, Mus. Wlsm.]

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>.—HAWAII: Kona, 4000 ft., (2) 20. VII., (3) 10—12. VIII., (1) 9. IX. 1892; Hualalai (Kona), 5000 ft., (1) 5. VIII. 1892; Mt. Kilauea, (3) VIII. 1896; Hilo, 2000 ft., (1) XII. 1895 (Perkins). Eleven specimens.

This species is very closely allied to the European *corticana*, Hb., and so far as one can judge from a small series it is equally variable in colour and more variable in size.

The females are all paler than the dark male above described, but some males are decidedly paler (than No. 28075) and show a tendency to greater suffusion and therefore obliteration of defined markings, the median streak being absorbed in the suffused shading, the dorsal markings also being scarcely traceable. On the other hand the females tend to develop more clearly defined spots and blotches, varying rather in the degree of confluence between them than in the amount of general suffusion of the darker colouring over the wing surface—in one specimen the dorsal markings are confluent, forming a dark blotch which spreads across the wing to the costa.

**379.** (3) *Enarmonia crassicornis*, sp. nov. (Pl. XI. fig. 2).

Antennae broad, somewhat flattened, very minutely ciliate; brownish cinereous. Palpi projecting half the length of the head beyond it; white. Head and Thorax white, the latter with a narrow anterior band of greyish fuscous and a greyish fuscous shade at the base of the tegulae. Forewings white, with a broad greyish fuscous shade occupying the costal half at the base, following the upper edge of the fold to beyond its middle, its outer edge, thence reverting obliquely to the costa at two-thirds from the base; upon

this costal blotch is some ferruginous mottling and a series of short, oblique, ferruginous costal streaks which are continued beyond it to the apex; a terminal greyish fuscous shade projects inwards from the apex and is reduplicated toward the lower half of the termen, the narrow space between its branches shining, silvery white; cilia white, mottled with greyish fuscous on their upper half. Exp. al. 14 mm. Hindwings greyish brown; cilia brownish cinereous. Abdomen greyish brown. Legs greyish brown, with whitish cinereous spurs and tarsi.

Type ♂ (25212) Mus. Wlsm.

HAB. HAWAII: Kona, above 4000 ft., IX. 1892. Two specimens.

**380.** (4) *Enarmonia* (?) *storeella*, sp. nov. (Pl. XI. fig. 3).

Antennae cinereous. Palpi projecting very slightly beyond the head; cinereous. Head and Thorax pale cinereous, minutely sprinkled with olive-grey. Forewings pale cinereous, broadly overshadowed with greenish olivaceous in a wide triangular costal patch extending from the base to one-third, its apex overlapping the fold—this patch is greyer on its basal, more greenish on its outer half; the paler ground-colour, remaining below the fold and in a broad ill-defined band arising from the middle of the dorsum and reaching nearly to the costa before the apex, is succeeded by another flush of olivaceous greenish which overspreads the apical and terminal portion of the wing, the whole having a minutely speckled appearance; a slender olive brownish line along the termen before the leaden grey cilia. Exp. al. 14 mm. Hindwings tawny brownish grey; cilia pale tawny grey. Abdomen tawny brownish grey. Legs cinereous, tarsi shaded above.

Type ♀ (28185) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., v. 1896. Unique.

The ♂ is unknown but there can be little doubt that this species is congeneric with *crassicornis*.

**381.** (5) *Enarmonia* (?) *obliqua*, sp. nov. (Pl. XI. fig. 4).

Antennae greyish fuscous. Palpi and Head whitish cinereous. Thorax cinereous. Forewings whitish cinereous, with pale olive-brown markings and some sprinkling of brownish grey scales between and about them; the markings consist of a series of about eight costal streaks, tending obliquely outwards, the first three meeting a broad pale olive-brown band arising from the dorsum at one-third and tending obliquely outward across the cell, the sixth produced to the middle of the termen and slightly sinuate; a triangular olive-brown dorsal patch before the tornus is sprinkled with blackish scales, the ground-colour before it and around its apex being almost white;

there is a patch of pale olive-brown at the apex, a line of the same running along the base of the whitish cilia and diffused through them about the middle of the termen; on the terminal area of the wing a leaden grey suffusion lies between the olive-brown lines and patches, which are sparsely sprinkled with blackish scales. Exp. al. 14—17 mm. Hindwings dark brown; cilia whitish cinereous, with a dark brown line along their base. Abdomen greyish fuscous above, whitish cinereous beneath and on the anal tuft. Legs whitish cinereous.

Type ♀ (25828) Mus. Wlsm.

HAB. HAWAII: Hualalai (Kona), 5000 ft., 5. VIII. 1892. Two specimens.

In the absence of the ♂ the genus cannot be determined with certainty.

### 43. BACTRA, Stph.

Type 1. *Tortrix lanceolana*, Hb. (Stph. 1834).

= § *APIHELLA*, Stph., Cat. Br. Ins. II. 180 (1829); Stgr.-Wk. Cat. etc.

BACTRA, Stph., Ill. Br. Ent. Haust. IV. 124 (1834); Fern., Meyr., Stgr.-Rbl. Cat. etc.

= *LEPTIA*, Gn., Ann. Soc. Ent. Fr. XIV. (2. s.) III. 169 (1845); Ind. Meth. 35 (1845).

Type 2. *Chiloides straminea*, Btl. (Btl. 1881).

= *CHILOIDES*, Btl., Ann. & Mag. NH. (5. s.) VII. 392—3 (1881).

Type 3. *Noteraula straminea*, Meyr. (nec Btl.).

=\* *CHILOIDES*, Meyr., Tr. N.Z. Inst. XVII. 142 (1885).

= *NOTERAULA*, Meyr., Tr. N.Z. Inst. XXIV. 217 (1892).

### 382. (1) *Bactra straminea*, Btl. (Pl. XI. fig. 5).

*Chiloides straminea*, Btl., Ann. & Mag. NH. (5. s.) VII. 393, No. 25 (1881)<sup>1</sup>; Meyr., Tr. N.Z. Inst. XVII. 142 *partim* (1885)<sup>2</sup>.

This species is so similar to *Bactra lanceolana*, Hb., in the variation of its colouring that a detailed description made from a single specimen could only be misleading.

The ground-colour is for the most part pale fawn (certainly browner than the general idea of the meaning conveyed by the word "stramineous" as used by Butler). The speckling along the costa and dorsum as well as on the disc and the slender lines indicating the pattern of the neuration (always more noticeable) are of a darker fawn-brown, or even fuscous tint, tending in some cases to blackish. The main feature of the variation is in the degree of insistence of a dark shade running from the base to the apex through the middle of the wing, in some specimens this is strongly marked, and is

diffused downward nearly to the dorsum, in others it is entirely absent, but the spots at the end of the cell and at the basal third of the fold are nearly always recognisable in addition to the speckled appearance of the wing-surface, especially along the margins. In size the species also varies considerably (Exp. al. 14—34 mm.) as is the case with its European representative, and were it not for the uniformly greater length of the palpi one could scarcely hesitate to regard it as a mere geographical variety of our well-known *Bactra lanceolana* presenting some exaggerated forms approaching in the width of the wing the larger variety of this insect which has so frequently been suspected of special distinction. (Described from a series of forty-six specimens.)

Type (101: 81. 7) *Oahu*, Mus. Br.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895; Makaweli, sea level, VI. 1894; Lihue, 1500 ft., 1896; Mts., 3000—4000 ft., VI. 1894 (Perkins).—OAHU: Salt marshes near Honolulu (Blackburn)<sup>1</sup>; near head of Kawailoa Gulch, IV. 1893; Pauoa, 2000 ft., VI. 1895; Mts., near Honolulu, VIII. 1900, 2000 ft., 27. X. 1892 (Perkins).—MOLOKAI: forest above Pelekunu, VIII. 1893; Mts., above 3000 ft., 16. IX. 1893, about 4000 ft., 23. IX. 1893 (Perkins).—LANAI: 2000 ft., VII. 1894 (Perkins).—MAUI: Haleakala, 5000 ft., V. 1896 (Perkins).—HAWAII: Kona, 3000 ft., IV. 1896, about 3500 ft., 21. VII. 1892, above 2000 ft., IX. 1892; Mt. Kilauea, VIII. 1895 (Perkins). Forty-six specimens.

After examining a very long series of this species I find I can separate it from *lanceolana*, Hb., by one character only, viz., the comparative length of the palpi which in the European species are distinctly shorter. In all other respects the numerous varieties found in both regions can be absolutely matched.

In company with others, at least equally competent to form an opinion, I have hitherto regarded *straminea* as inseparable from *lanceolana*, Hb., but if we admit the value of the longer terminal joint of the palpi, which certainly enables us to separate the Hawaiian from the European form, the name *straminea* may be retained to designate this geographical and local race.

When describing *Chiloides*, Butler called attention to the "separate emission of the second and third median branches" of the hindwings, this observation applies equally to very numerous specimens of our common *Bactra lanceolana* although not to all, and in the Hawaiian series exactly similar specimens from the same locality taken on the same day vary in this particular.

Meyrick [Tr. N.Z. Inst. XVII. 142 (1885)] has drawn especial attention to the identity of the New Zealand and Hawaiian species, and in redescribing *Chiloides*, Btl., (subsequently changed to *Noteraula*, Meyr.) he laid great stress upon the structure of the antennae, but a careful examination and comparison shows that in the Hawaiian examples they are uniformly shortly biciliate, whereas the New Zealand examples are biciliate from 1—1½, the joints having also a more dentate appearance ("antennae in

male serrate, with whorls of moderate cilia," Meyr.). In describing the genus *Bactra* from British specimens, Meyrick [HB. Br. Lp. 456 (1895)] uses the words "antennae in ♂ moderately ciliated" in reference to *lanceolana*, Hb., from which the palpi rather than the antennae must be relied upon to separate the Hawaiian species. I have not felt justified in reversing Mr Meyrick's decision on the strength of so slight a difference but its permanence and uniformity throughout the series might not unreasonably be held to constitute a character of special value, and as I am unable to regard *Noteraula*, Meyr., as generically distinct from *Bactra*, Stph., and *Chiloides*, Btl., it would be appropriate that *straminea*, Meyr. (nec Btl.) should bear at least the varietal name *Bactra noteraula* (n. n.).

## II. TORTRICINAE.

### 44. PARARRHAPTICA, gen. nov.

Type *Pararrhaptica perkinsana*, Wlsm.

(*παραρράπτειν* = to sew on as a fringe.)

Antennae biciliate ( $\frac{1}{2}$ ) and serrate towards their apex. Palpi projecting about the length of the head beyond it, median joint rather roughly clothed, terminal joint short, depressed, almost concealed. Head roughened. Thorax not crested. Forewings trapezoidal, costa abruptly angulate towards the base, with narrow costal fold in ♂, shortly ciliate throughout; apex obtuse, termen oblique, scarcely sinuate; ♂ with a patch of long appressed hair-scales along the outer half of the fold: neuration 12 veins, all separate, 7 to termen. Hindwings as broad as the forewings, evenly rounded, scarcely sinuate below the obtuse apex: neuration 8 veins, 3 and 4 from a short stalk, 6 and 7 separate, but approximating towards base. Legs smooth.

Allied to *Archips*, Hb., but distinguished by the fringe of long hairs along the fold in the forewings.

### 383. (1) *Pararrhaptica perkinsana*, sp. nov. (Pl. XI. fig. 6).

Antennae pale fawn, smeared with fuscous above at the base. Palpi pale fawn, smeared with fuscous externally. Head pale fawn. Thorax whitish fawn. Forewings whitish fawn, shaded with pale fawn, especially on the basal and costal areas and across the middle, the costal fold blackish; six dark fuscous costal spots, one in the middle quadrangular and larger than the others; the first at about one-third is margined on either side by blackish scales which are produced obliquely downward in two broken divergent streaks across the cell; a small blackish spot near the end of the cell is succeeded by a sprinkling of blackish dots in the anteterminal area; a few blackish

scales in a waved line at about one-fourth indicate a basal patch and a series of small fuscous dots along the dorsum is continued along the base of the pale fawn terminal cilia; the elongate tuft of obliquely appressed hairs on the outer half of the fold is very pale fawn; the dark markings are visible on the underside. Exp. al. 21 mm. Hindwings and cilia pale fawn-grey, much mottled with greyish fuscous, showing through from the underside of the wing where the spots are more conspicuous. Abdomen cinereous. Legs whitish ochreous.

Type ♂ (28174) *Maui*, Mus. Wlsm.

HAB. MOLOKAI: 3500 ft., (♀) 17. v. 1893.—MAUI: Haleakala, 5000 ft., (♂) v. 1896; Olinda (Haleakala), 4000 ft., (♀) v. 1896. Three specimens.

Described from the single ♂ from Haleakala; a ♀ in poor condition from Olinda probably belongs to this species, and another ♀ from Molokai cannot be distinguished from it. In both the females the markings are to some extent evanescent, but they are also partially removed by abrasion.

#### 45. ARCHIPS, Hb.

Type *Tortrix piceana*, L. (Hb. 1806).

ARCHIPS, Hb., Tent. p. [2] (1806); Fernald, Bull. US. Nat. Mus. 52. 478—81 (1902). = *CACOEZIA*, Hb., Verz. bek. Schm. 388 (1826), Hein., Stgr.-Wk., Fern., Meyr., etc.

#### 384. (1) *Archips postvittanus*, Wkr. (Pl. XI. fig. 7).

[? = *retractana*, Wkr.<sup>13</sup>]; = *dotatana*, Wkr.<sup>13</sup>; = *scitulana*, Wkr.<sup>13</sup>; = *basialbana*, Wkr.<sup>13</sup>; = *secretana*, Wkr.<sup>13</sup>; = *secundana*, Wkr.<sup>13</sup>; = *consociana*, Wkr.<sup>13</sup>; = *reversana*, Wkr.<sup>13</sup>; = *foedana*, Wkr.<sup>13</sup>; = *sobriana*, Wkr.<sup>13</sup>; = *immersana*, Wkr.<sup>13</sup>

[? *Teras retractana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 288—9 (1863)<sup>1</sup>]. *Teras postvittana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 297 (1863)<sup>2</sup>. *Teras dotatana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 298 (1863)<sup>3</sup>. *Teras scitulana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 298—9 (1863)<sup>4</sup>. *Teras basialbana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 299 (1863)<sup>5</sup>. *Teras secretana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 300 (1863)<sup>6</sup>. *Pandemis secundana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 310—11 (1863)<sup>7</sup>. *Pandemis consociana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 311—2 (1863)<sup>8</sup>. *Dichelia reversana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 321 (1863)<sup>9</sup>. *Dichelia foedana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 321—2 (1863)<sup>10</sup>. *Dichelia sobriana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 322 (1863)<sup>11</sup>. *Paedisca immersana*, Wkr., Cat. Lp. Ins. B.M. xxviii. 380 (1863)<sup>12</sup>. *Cacoecia postvittana*, Meyr., Pr. Lin. Soc. NSW. vi. 502—4, 702, 703, 705 (1881)<sup>13</sup>; Oliff, Agr. Gaz. NSW. i. 7—8, Pl. I. 2 (1890)<sup>14</sup>.



Types ♂ ♀ Mus. Br. *postvittana*, Wkr. ♀; [= *retractana*, Wkr. ♂, according to type, labelled 'Australia,' but not description<sup>13</sup>]; = *dotatana*, Wkr. ♂; = *scitulana*, Wkr. ♂; = *basialbana*, Wkr. ♂; = *secretana*, Wkr. ♀; = *secundana*, Wkr. ♀; = *consociana*, Wkr. ♀; = *reversana*, Wkr. ♀; = *foedana*, Wkr. ♀; = *sobriana*, Wkr. ♀; = *immersana*, Wkr. ♂.

HAB. [? UNITED STATES<sup>1</sup>.] AUSTRALIA. NEW SOUTH WALES<sup>2,13</sup>, QUEENSLAND<sup>14</sup>, TASMANIA<sup>3</sup>, VICTORIA<sup>13</sup>. Larva *Corea robusta*<sup>13</sup>, *Boronia ledifolia*<sup>13</sup>, *Persoonia lanceolata*<sup>13</sup>, *Grevillea robusta*<sup>13</sup>, *Polygonum*, sp.<sup>13</sup>, Apple<sup>14</sup>, VIII<sup>13</sup>, IX<sup>13</sup>, I<sup>13</sup>, Imago, VIII—X<sup>13</sup>, I<sup>13</sup>, III—IV<sup>13</sup>. HAWAIIA. KAUAI: Lihue, 1896, on introduced *Acacia* (seven specimens, Perkins).

**385.** (2) *Archips longiplicatus*, sp. nov. (Pl. XI. fig. 8).

Antennae (♂) serrate, biciliate  $1\frac{1}{2}$ ; light mouse-grey. Palpi projecting more than the length of the head beyond it, porrect and somewhat hirsute above; pale mouse-grey. Head and Thorax pale mouse-grey. Forewings with a long loosely turned costal fold reaching to, or beyond, the middle; very pale, shining, mouse-grey, obscurely mottled with brownish grey in some lights, with irregular, large and small, spots consisting of two shades of chestnut-brown; the base of the costal fold is chestnut-brown, with some darker mottling on and beyond it; an irregular quadrate patch of chestnut-brown, margined before and behind by a richer and darker shade of the same, lies at about the middle of the discal cell and is more or less connected with the costa above it and with the dorsum beyond it by irregular spots and smears of the same two shades of colour; an elongate, dark chestnut-brown (almost ferruginous) spot lies beyond it at the end of the cell, with a series of costal spots above it reaching to the apex and some minute dots of the same colour towards the termen; the cilia have a slight tawny tinge and contain a series of somewhat obscure terminal spots along their base. Exp. al. 25 mm. Hindwings and cilia shining, bone-grey with darker spots, and mottlings showing through them. Abdomen pale brownish grey. Legs bone-grey.

Type ♂ (26604) *Maui*, Mus. Wlsm.

In another specimen the antennae are biciliate 1, and dotted above with fuscous to beyond their middle; the thorax with a fuscous spot posteriorly; the wings are of a paler (more ochreous) colour, the darkly margined spots and the base of the costal fold tinged with rust-brown, the square discal spot merged in an outwardly expanding brownish shade, directed towards the tornus. Exp. al. 20 mm. Paratype ♂ (25064—*Oahu*).

In the ♀ the discal spots and central shade are obliterated, showing remnants only of the darker streaks which form their margins, moreover the form of the forewings is very different, the costa being arched at the base only and flattened along the middle. Exp. al. 22 mm. Paratype ♀ (25860—*Oahu*).

HAB. OAHU: Waianae Mts., 2000—3000 ft., (2) IV. 1892; Mts., near Honolulu, 2000 ft., (1) 27. X. 1892.—LANAI: 2000 ft., (1) I. 1894.—MAUI: Haleakala, 5000 ft., (1)

2. IV. 1894. HAWAII: 2000 ft., (1) IX. 1892, 3000 ft., (1) IX. 1892; Kona, 4000 ft., (1) IX. 1892. Eight specimens.

Specimens from Hawaii are smaller than from the other islands. Exp. al. ♂ 18—♀ 20 mm.

**386.** (3) *Archips leopardellus*, sp. nov. (Pl. XI. fig. 9).

Antennae pale fawn-ochreous. Palpi curving downward to more than the length of the head beyond it; very pale fawn, shaded at the sides. Head and Thorax greyish fawn. Forewings (♂) costa much arched, with a long narrow costal fold extending to one-half, not tightly appressed, apex rounded; yellowish fawn, transversely mottled with fawn-grey, and with numerous small umber-brown spots about the terminal, basal, and costal areas; a series of brownish fuscous spots along the costa, of which one, a little beyond the edge of the fold, is rather larger than the four others between it and the apex; across the middle of the wing a slight fawn-grey shade is indicated by broken curved brown streaklets along its margins which are narrowed to a square spot on the middle of the cell; this is succeeded by a rounder spot at the end of the cell, similarly margined with dark brown; cilia pale fawn, somewhat mottled towards the apex. Exp. al. 20 mm. Hindwings pale brownish grey, the mottling of the underside faintly showing through; cilia scarcely paler. Abdomen fawn greyish. Legs very pale whitish ochreous.

Type ♂ (27678) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Unique.

The antennal ciliations are much shorter than in *longiplicata*.

**387.** (4) *Archips punctiferanus*, sp. nov. (Pl. XI. fig. 10).

Antennae (♂) biciliate  $1\frac{1}{2}$ ; pale mouse-colour. Palpi projecting twice the length of the head beyond it, the short terminal joint almost concealed in the clothing of the very long arched median joint; pale mouse-grey on their inner side, darker externally. Head and Thorax mouse-colour; face darker, with a few fawn-brown scales behind the eyes. Forewings with the costa evenly arched throughout, with a long loosely turned costal fold, reaching nearly to the middle, apex moderately acute, termen oblique, slightly sinuate; pale, shining, mouse-colour, with a faintly reticulate appearance, with several small dark brown spots scattered about the surface, some on the middle of the cell and others towards the apex being specially noticeable; the costal fold is dark chestnut-brown towards the base, the costal and terminal cilia being paler chestnut-brown tipped with very light mouse-colour. Exp. al. 26 mm. Hindwings fawn whitish, with grey spots and mottling showing through them. Abdomen very pale mouse-colour. Legs bone whitish.

Type ♂ (26581) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., III. 1894. One specimen. [? MOLOKAI, about 4000 ft., 9. VI. 1893; ♀ (26103)].

The specimen from Molokai is precisely the form that would be expected in the ♀ of this species. The colour and markings also coincide, but the hindwings are more densely spotted. Exp. al. 22 mm. I am unable to regard it as a separate species although the time of year at which it was taken and the locality preclude any absolute certainty since it is obvious that if the two specimens belong to one species there must be more than one brood in the year and its distribution must be somewhat extended.

**388.** (5) *Archips trochilidanus*, sp. nov. (Pl. XI. fig. 11).

Antennae (♂) biciliate 1; dark tawny brown. Palpi projecting the length of the head beyond it; dark tawny brown. Head dark brown. Thorax dark tawny brown, sprinkled with green scales. Forewings with a loosely turned costal fold reaching to slightly beyond the middle; dark tawny brown, with numerous large patches and intermediate sprinkling of bright metallic green, tending to form an oblique median fascia and a large subterminal and subapical patch; between these the ground-colour is margined by narrow dark fuscous striae, a series of four costal spots beyond the middle is also tinged with dark fuscous; cilia tawny; underside dark brown, the position of the green markings distinctly indicated on the costa by dull ochreous. Exp. al. ♂ 22; ♀ 31 mm. Hindwings umber-brown; cilia brownish cinereous. Abdomen dark umber-brown. Legs brownish cinereous.

Type ♂ (25170); ♀ (25166) Mus. Wlsm.

HAB. MOLOKAI: 3500 ft., (♀) 17. v. 1893, 3000 ft., (♂) 4000 ft., (♂) VI. 1893. Three specimens.

The ♀ of this species does not appear to differ in the distribution of the markings, it is much worn and decidedly larger than the ♂ and the costa is somewhat more abruptly arched at the base.

**389.** (6) *Archips fuscoviridis*, sp. nov. (Pl. XI. fig. 12).

Antennae shortly biciliate and serrate; tawny fuscous. Palpi somewhat short, projecting scarcely the length of the head beyond it; median joint densely, but not roughly, clothed above, terminal joint half the length of the median; dark tawny greyish. Head and face roughly clothed, with dense, obtuse, frontal tuft; dark olive-green. Thorax tufted posteriorly; dark olive-green, marked with brownish fuscous.

Forewings with the costa evenly arched before the middle, ♂ with a narrow costal fold at the base, apex somewhat obtuse, termen convex; shining, dark olive-grey, blotched with tawny fuscous; a tawny fuscous streak on the fold near the base is diffused on either side, merging in lines and reticulations of the same colour, forming an indistinct basal patch; beyond this is a similarly indicated pair of oblique fasciae, one before, the other about the middle, not reaching to the dorsum—of the first, the only conspicuous part is a dark tawny fuscous triangular blotch, its lower extremity crossing the fold, on the second a smaller blotch at the end of the cell is noticeable; a tawny fuscous shade along the termen and apex is preceded by another parallel with it, reaching the tornus; the whole central portion of the wing is suffused with a tawny fuscous gloss partially obscuring the green ground-colour; along the dorsum is a series of narrow dark fuscous spots extending around the termen to the apex at the base of the pale tawny cilia. Exp. al. 27 mm. Hindwings tawny grey, with darker greyish mottlings showing through from the underside; cilia pale cinereous. Abdomen brownish grey. Legs pale cinereous.

Type ♀ (26412) *Lanai*, Mus. Wlsm.

HAB. OAHU: NW. Koolau Range, (♂) VII. 1901.—LANAI: 2000 ft., (♀) II. 1894. Two specimens.

**390.** (7) *Archips* (?) *lichenoides*, sp. nov. (Pl. XI. fig. 13).

Antennae greenish grey, narrowly banded above with black. Palpi rather rough above, projecting about the length of the head beyond it; pale greenish grey. Head and Thorax olive-green, mixed with fuscous. Forewings very roughly clothed, especially along the base of the costa, with an almost equal admixture of olive-green, silvery grey, greyish fuscous and dark fuscous scaling, presenting an evenly mottled and reticulated appearance on which an oblique basal patch, an oblique fasciaform median shade, a dark spot at the end of the cell and four post-median costal blotches are faintly indicated by a preponderance of the darker colouring, the pale greenish grey cilia being also reticulated with two shades of fuscous. Exp. al. 34 mm. Hindwings whitish cinereous, with pale fuscous shades and mottlings; cilia pale, shaded along their base. Abdomen cinereous. Legs pale brownish cinereous, the tibiae and first and second tarsal joints fuscous above.

Type ♀ (28064) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Unique.

This species greatly resembles *fuscoviridis*, and might easily be mistaken for its ♀, but the rough scaling at the base of the costa and the more spotted hindwings (which in *fuscoviridis* are rather blotched and streaked) are differences which could not be expected to occur in sexes of one species. This is almost certainly an *Archips* but cannot be referred with certainty to that genus in the absence of the ♂.

**391.** (8) *Archips* (?) *subsenescens*, sp. nov. (Pl. XI. fig. 14).

Antennae brownish fuscous. Palpi projecting more than the length of the head beyond it, the median joint densely and roughly clothed above, the terminal joint scarcely half the length of the median; hoary white, the basal half of the median joint brownish fuscous. Head and Thorax hoary white, sprinkled with brownish fuscous. Forewings shining, whitish, profusely sprinkled and reticulated with brownish fuscous mixed with pale olive-greenish scales; at the extreme base of the costa are three or four irregular dark brownish fuscous streaks and spots, and two of the same also at the extreme base on either side of the fold; a series of upright dorsal streaklets before the middle precede an irregular ill-defined oblique central fascia, narrowed to a quadrate spot at the upper edge of the cell, this fascia is wider on its lower half than above, its margins irregularly angulated throughout, a dark costal spot beyond the middle precedes others less clearly defined; the terminal portion of the wing is also much spotted with fuscous mixed with olivaceous scales which impart a greenish hue to the shining white ground-colour on which they are associated throughout with the delicate brownish fuscous reticulations; cilia whitish, with a few brownish scales intermixed. Exp. al. 34 mm. Hindwings tawny greyish, with obscure greyish fuscous mottlings, more visible on the under than on the upper side. Abdomen brownish grey (discoloured). Legs pale cinereous.

Type ♀ (26334) Mus. Wlsm.

HAB. MOLOKAI: 5. VIII. 1893. Unique.

In the absence of the ♂ this species cannot be referred with certainty to the genus *Archips*.

**46.** PANAPHELIX, gen. nov.

(παῖνᾶφῆλιξ = removed from friends.)

Type *Panaphelix marmorata*, Wlsm.

Antennae, ♂ strongly bipectinate 5—6, each pectination biciliate; ♀ shortly biciliate. Palpi porrect, extending more than the length of the head beyond it, median joint roughly clothed above, terminal joint depressed, fully half the length of the median. Head somewhat rough above and in front. Thorax smooth. Forewings with the costa evenly arched, ♂ without a costal fold, apex slightly depressed, termen scarcely sinuate, obliquely convex: neuration 12 veins, all separate; 7 to termen. Hindwings spotted, broader than the forewings, strongly sinuate below the apex: neuration 8 veins; 3 and 4 connate, 5 slightly approximating to 4 at origin, 6 and 7 separate but approximating

towards base. Abdomen, ♂ slender; ♀ moderate. Legs smooth, spurs very long, the inner one of the first pair conspicuously longer than the outer.

This genus is most nearly allied to *Dipterina*, Meyr., from which it differs essentially in the strongly bipectinate antennae.

**392.** (1) *Panaphelix marmorata*, sp. nov. (Pl. XI. figs. 15—16).

Antennae, ♂ brownish cinereous; ♀ pale cinereous, the basal joint reddish orange. Palpi, ♂ orange ochreous, clouded at the sides and across the terminal joint with brown; ♀ reddish orange, ferruginous externally. Head, ♂ orange ochreous; ♀ yellow. Thorax, ♂ mixed reddish orange and brown; ♀ reddish orange, mixed with golden yellow. Forewings, ♂ dark brown, with reddish orange and white reticulated patches; from the costa at one-fourth a band of white runs obliquely outward to the middle of the cell, whence it reverts to the dorsum at a right angle, this is interrupted on its upper half by two lines and one or two spots of rich reddish orange, its lower half being almost entirely suffused with the same colour; between this and the base the rich brown ground-colour is blotched with reddish orange and whitish reticulations, with a short interrupted white streak along the base of the median vein; beyond this angulated basal patch are two costal spots of reddish orange mixed with white, a post-median costal patch, white reticulated with reddish orange and nucleated with brown on the margin, and two or three small costal spots towards the apex; below the outer end of the fold are some obscure reddish orange spots, followed by a large reniform patch above the tornus, white reticulated with reddish orange, some reddish orange spots along the termen are preceded by an elongate white patch reaching to the apex, much reticulated with reddish orange; cilia brown: ♀ golden yellow, reticulated with reddish orange, with bands of rich ferruginous; a ferruginous costal spot near the base is followed by a dark fuscous dot below and beyond it; an outwardly angulated narrow ferruginous band indicates the outer edge of a basal patch at one-fourth and contains a few fuscous scale-spots; it is followed by a small triangular ferruginous dorsal spot before the middle which is separated by a short space from a broad ferruginous band extending obliquely outward to the costa before the apex, sending from the end of the cell a strong branch, parallel with the basal patch, reaching the costa before the middle, two ferruginous costal spots lying between these branches; at the end of the cell, in the ferruginous band, is a small dark fuscous scale-patch, from the costa, at the extremity of the ferruginous band, a narrower band of the same colour containing several dark fuscous spots descends parallel with the termen nearly to the tornus; the veins throughout are indicated by reddish orange lines; cilia reddish orange; underside canary-yellow, especially around the margins, the dark markings of the upper side indicated by clouds of tawny grey. Exp. al. ♂ 32—37; ♀ 32 mm. Hindwings, ♂ bone-grey, with darker mottlings showing through them: ♀ shining, bone-white, with greyish fuscous spots and

mottlings, of which one beyond the end of the cell is specially conspicuous; underside canary-yellow around the margins, the remainder of the wing pale straw colour, the markings more conspicuous than on the upper side. Abdomen, ♂ and ♀ bone-grey. Legs, ♂ bone-grey, tinged with ochreous; ♀ inclining to ochreous.

Type ♂ (26537); ♀ (26525) Mus. Wlsm.

HAB. MAUI: Haleakala, 5000 ft., (♀) IV. 1894, 6000 ft., (♂) IV. 1894, 5000 ft., (♂) X. 1896. Three specimens.

The ♀ was at first described as distinct under the name *chrysochroa*, and should it be proved to represent a constant form of variation, or to belong to another closely allied species, this name may be applied to it.

*Panaphelix* (?) sp.?

HAB. HAWAII: Mt. Kilauea, IX. 1895, ♀ (27377) Mus. Wlsm.

A single specimen in poor condition is most probably the ♀ of a smaller species (Exp. al. 23 mm.) of *Panaphelix*, but it would be rash to describe it from such material.

#### 47. DIPTERINA, Meyr.

Type *Dipterina imbriferana*, Meyr. (Meyr. 1882).

DIPTERINA, Meyr., Pr. Lin. Soc. NSW. VI. 523—4 (1881): NZ. Jr. Sc. I. 277 (1882): Tr. NZ. Inst. XV. 54 (1883).

#### 393. (1) *Dipterina fulvosericæ*, sp. nov. (Pl. XI. figs. 17—18).

Antennae, ♂ biciliate 1, pale buff-brown, with a series of small fuscous dots above to half their length, a large fuscous spot beneath the basal joint: ♀ biciliate 1, tawny fuscous, or as in the ♂. Palpi, ♂ projecting twice the length of the head beyond it, terminal joint scarcely one-third the length of the median; brownish ochreous, with a dark brown shade along the outer side of the median joint: ♀ extending nearly thrice the length of the head beyond it, the median joint densely and closely clothed above and beneath, terminal joint naked, half the length of the median; tawny fuscous. Head tawny fuscous. Thorax, ♂ greyish fuscous, tegulae buff-brown; ♀ tawny fuscous, with a slight purplish gloss. Forewings, ♂ brownish ochreous on the costal half towards the base and on the terminal portion, elsewhere shaded with tawny greyish fuscous; a large irregular, reduplicated, trapezoidal dark tawny blotch commencing at the base below the fold reaches beyond the middle of the cell, it is deeply incised above, about its middle, a whitish cinereous line separating the incised portion from the paler ground-colour, its lower margin less clearly defined than its upper and outer margins, the latter

also bounded by a pale cinereous line; the outer half of this blotch is square and abruptly terminated on the upper edge of the cell, where it is narrowly separated from a slightly inverted ovoid costal spot of the same colour, also narrowly margined with pale cinereous; this spot is preceded by an outwardly oblique dark costal streak and followed by four small square dark costal spots, the outer two of which are connected with a small tessellated dark patch below them; at the end of the cell is another square tessellated patch, margined before and behind with pale cinereous, up to the outer edge of which the pale brownish ochreous terminal area encroaches upon the darker colouring which precedes it; a few greyish fuscous mottlings occur along the lower half of the termen, with a single rounded spot opposite to its middle; cilia brownish ochreous; under side with the costa and termen much mottled: ♀ dark tawny sericeous, irrorated with pale cinereous, with two dark fuscous angular blotches; one on the dorsum near the base, furcate on the fold, its outer margin within the fork indicated by a line of pale cinereous scales; a second extending from the fold to the upper edge of the fold before the middle, trapezoidal, its base broader than its apex, its lower internal angle somewhat produced, touching the fold, this is margined before and behind by pale cinereous lines; along the costa are six dark fuscous spots, of which the first only is before the middle and is obliquely produced inwards, obtusely rounded at its apex and margined by a pale cinereous line; there is also a small dark fuscous spot at the extreme base of the costa and some fuscous mottling is visible between the end of the cell and the tornus; the costa is much arched near the base, the termen slightly sinuate below the apex; cilia tawny fuscous; underside with the costal spots distinct. Exp. al. ♂ 28; ♀ 32—36 mm. Hindwings, ♂ brownish grey, with brownish ochreous cilia, blending into brownish grey towards the flexus; underside much mottled: ♀ broader than the forewings, brownish cinereous, with slight greyish fuscous mottling showing through from the underside on the costal half. Abdomen brownish cinereous. Legs pale cinereous, with four darker tarsal bands above.

Type ♂ (25165) *Molokai*; ♀ (26801) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (♀) VI. 1894.—MOLOKAI: 3500 ft., (♂) 17. VI. 1893.—LANAI: above 2000 ft., (♂) I. 1894, 2000 ft., (♀) II. 1894.—OAHU: NW. Koolau Range, VII. 1901. Five specimens.

#### 48. TORTRIX, L.

Type *Phalaena Tortrix viridana*, L. (Stph. 1829).

TORTRICES, L., Syst. Nat. (ed. x.) I. 496, 530—2 (1758). TORTRIX, Toern., Diss. Acad. Upsal. III. 259 (1801); [Hw.] Prodr. Lp. Br. 15 (1802); Stph., Cat. Br. Ins. II. 168 (1829); Ill. Br. Ent. Haust. IV. 66, 68 (1834); Hein.; Stgr.-Wk.; Fern.; Meyr. etc.; Wlsm. & Drnt., Ent. Mo. Mag. XXXIII. 39—40 (1897); Stgr.-Rbl., Cat. Lp. Pal. II. 88—90 (1901); Fern., Bull. US. Nat. Mus. 52. 482—4 (1902).



**394.** (1) *Tortrix chlorocalla*, sp. nov. (Pl. XI. fig. 19).

Antennae brown. Palpi suberect, extending more than the length of the head beyond it, the terminal joint half as long as the median; dark tawny brown. Head and Thorax dark brown, the latter with some paler mottling. Forewings dark brown, approaching to fuscous along the cell and below the costa; a conspicuous, shining, whitish, outwardly oblique, cuneiform patch at one-third is broken on the costa by a small brown spot; a smaller white costal spot, similarly broken, occurs beyond the middle; beneath the costa about the base are two brilliant dark green patches, followed by a few scales of the same colour which touch the white costal patch; a series of brilliant dark metallic green patches occur along the fold as well as beneath its base, the apical and terminal area being also brilliantly spotted with dark green; cilia tawny brownish. Exp. al. 21—24 mm. Hindwings and cilia shining, pale yellowish brown. Abdomen and Legs pale yellowish brown.

Type ♀ (28042) Mus. Wlsm.

Variation.—Some specimens differ from the type in the absence of the white blotches on the forewings and in the further distribution of the metallic green patches over the area occupied by them; with these exceptions the coloration is similar.

Paratype ♀ (28629) Mus. Wlsm.

A small ♂ probably belonging to this species is somewhat worn; it possesses no white costal patches and is of a generally paler brownish hue, mottled with pale brownish cinereous, the position of the patches being indicated in this colour; the green patches are quite invisible, except at a certain angle in a strong light, they are somewhat more profusely distributed and more confluent, also, if anything more brilliantly iridescent and there is an indication of a small whitish spot at the end of the cell. Exp. al. 15 mm. The palpi are very decidedly shorter than in the ♀ ♀, especially the terminal joint, and it is possible that a closely allied species may be indicated.

Paratype ♂ (28639) Mus. Wlsm.

HAB. HAWAII: Kaawaloa (Kona), 1500 ft., (1) vi. 1892; Oloo, (1) vi. 1895, Type (♀) ix. 1896, 2000 ft., (♀♀♂) xi. 1896; Kona, 3000 ft., (1) ix. 1892. Seven specimens.

In the hindwings of both sexes a brilliant pale lilac hue is visible in sunlight, but this applies to other species and is not confined to the genus.

**395.** (2) *Tortrix metallurgica*, sp. nov. (Pl. XI. fig. 20).

Antennae brownish cinereous. Palpi somewhat erect, terminal joint half the length of the median; cinereous, with a fuscous shade externally at the base and before the end of the median joint and a fuscous ring around the terminal joint which is tipped with whitish. Head brown, with a projecting fringe of scales above. Thorax brownish

cinereous. Forewings, costa evenly arched, termen moderately straight, apex obtusely rectangular; dark tawny brown, blotched with pale greenish ochreous, bright metallic steel-green scales being strewed over and between the blotches in broken transverse bands; the ochreous blotches prevail on the basal third of the costa, on the middle of the dorsum and in the terminal and apical regions, a small patch also occurring a little beyond the middle of the costa sending two streaks to the margin; a line of metallic spots runs parallel with the termen, and a divided fuscous blotch occurs at the end of the cell; cilia tawny greyish. Exp. al. (♂) 16—19 (♀) mm. Hindwings greyish brown; cilia slightly paler, tipped with pale cinereous. Abdomen greyish brown. Legs pale cinereous, the tarsi faintly spotted above with brownish grey.

Type ♂ (26397) *Molokai*, Mus. Wlsm.

In the ♀ which is larger, a conspicuously paler greenish white cuneiform patch runs obliquely from the costa at one-fourth to the middle of the cell and three costal streaks are visible on the apical third.

Paratype ♀ (26413) *Lanai*, Mus. Wlsm.

HAB. MOLOKAI: 3000 ft., (♂) 20. IX. 1893.—LANAI: 2000 ft., (♀) II. 1894. Two specimens.

**396.** (3) *Tortrix thoracina*, sp. nov. (Pl. XI. fig. 21).

Antennae dark brownish fuscous, the basal joint tipped with ochreous. Palpi, projecting more than the length of the head beyond it, the median joint hirsute above and beneath, the terminal joint obtuse, nearly half the length of the median; brownish fuscous mixed with whitish ochreous. Head brown above, hoary fuscous in front. Thorax white, shaded anteriorly with fawn-brownish. Forewings with large blotches of dark brownish fuscous mixed with shining, dark blue-grey scales, the first forming an extended dorso-basal patch, its outer edge angulated inward on the fold, its lower margin extending to the middle of the dorsum while its upper edge is separated from the costa by a whitish ochreous band in which are three or four dark brownish fuscous costal spots; this band, deflected outward to the dorsum, separates with two slight interruptions the basal patch from an even larger triangular costal patch of the same colour, also strewed with some shining, blue-grey speckles; this extends from about one-fourth from the base nearly to the apex and contains beyond the middle a shining, whitish ochreous spot, interrupted by a dark costal dot; the lower extremity of the triangle reaches to the fold where it is somewhat strewed with olive-brown; the space between this and the termen is shining, olivaceous ochreous, mottled with whitish, containing two curved transverse bands of olive-brown spots diffused and blended, the one along the termen, the other, within and parallel to it but meeting on the dorsum before the tornus; apex and cilia chequered with greyish fuscous and whitish ochreous, some small almost pure

white scale-spots at their base on the middle of the termen and at the tornus. Exp. al. 26 mm. Hindwings brownish grey, the cilia on their outer half very pale greyish cinereous. Abdomen and Legs brownish grey.

Type ♀ (26871) Mus. Wlsm.

Variation.—In a small ♂, almost undoubtedly belonging to this species, the lighter markings are unaccompanied by white scaling and are decidedly of a browner hue; the first pale costal blotch is strongly interrupted above the fold by the outward diffusion of the basal patch which, after reaching the end of the cell, is attenuated to the tornus. Exp. al. 21 mm. The antennae are slightly serrate, with very short ciliations. The thorax is dark brownish fuscous with pale brownish anterior and posterior margins.

Paratype ♂ (27679) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (♂) IV. 1895; Mts., 3000—4000 ft., (♀) VI. 1894. Two specimens.

**397.** (4) *Tortrix*(?) *falerniana*, sp. nov. (Pl. XI. fig. 22).

Antennae dark tawny purplish. Palpi projecting more than the length of the head beyond it, somewhat triangular, with a close thick-set brush along the upper surface of the median joint, terminal joint somewhat short, smooth; dark tawny. Head and face somewhat rough; dark tawny. Thorax dark tawny, with a purplish vinous tinge posteriorly. Forewings with the costa slightly arched, obliquely ascending at the base, straight beyond, the termen scarcely oblique, not sinuate; shining, purplish vinous, with faint tawny reticulations, a series of small triangular tawny ferruginous costal spots, an oblique tawny ferruginous fascia descending narrowly from the costa at one-third, dilated on the lower half of the cell to its outer end and thence again restricted to the dorsum beyond the middle; an inwardly biangulated band of the same colour precedes the termen and is furcate to the dorsum before the tornus; cilia brownish. Exp. al. 25 mm. Hindwings with veins 6 and 7 distinctly stalked; grey, with darker spots and mottlings showing through them; cilia grey, with a slight vinous tinge. Abdomen [missing]. Legs cinereous, with grey tarsal bands.

Type ♀ (26076) Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., 22. v. 1893. Unique.

**398.** (5) *Tortrix*(?) *capucina*, sp. nov. (Pl. XI. fig. 23).

Antennae pale fawn. Palpi projecting more than the length of the head beyond it, median joint thickened with dense scales above, terminal joint short; deep chocolate-brown, paler on their inner sides. Head and Thorax deep chocolate-brown, the face

and tegulae pale fawn. Forewings pale fawn, with an elongate triangular dark chocolate-brown costal patch commencing before the middle and reaching nearly to the apex; a dark chocolate dorsal spot near the base, connected with the base by scales of the same colour, and two small costal spots above it; a number of minute chocolate-brown dots are scattered over the terminal portion of the wing from beyond the middle of the dorsum nearly to the apex—in all these chocolate dots, as in the costal patch, there is a slight admixture of tawny reddish scales; cilia brownish ochreous, containing a few tawny spots below the apex. Exp. al. 24 mm. Hindwings pale bone-grey, with darker specklings showing through them, cilia with a slight ochreous tinge. Abdomen fawn-brownish. Legs pale bone-grey, the tarsi with four brown bands.

Type ♀ (26358) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., 23. IX. 1893.—HAWAII: Kona, 3000 ft., VI. 1892. Two specimens.

This species has much the appearance of an *Oxygrapha*, but the neurulation, although utterly abnormal in the left forewing of the type (14 veins; 2 and 11 both outwardly furcate, the latter from a narrow supplementary cell; 3 and 4 connate; 8 furcate at base, one fork connate with 7, the other connected with 9 near its origin) proves it distinct from that genus.

**399.** (6) *Tortrix rubiginis*, sp. nov. (Pl. XI. fig. 24).

Antennae brownish cinereous. Palpi hoary whitish, shaded with greyish fuscous externally. Head hoary white. Thorax hoary, mixed with fuscous. Forewings white, much smeared and banded with greyish fuscous on which are spots and streaks of dark fuscous, tending, especially on the costal half of the wing, to define the form of the clouded markings; these, although more or less blending, show a short basal patch divided by a narrow ferruginous basal streak; a triangular costal patch reaching to one-third from the base, indistinctly produced to the fold; a larger costal patch reaching to two-thirds, produced obliquely outward and recurved to the dorsum before the tornus; and an anteapical costal shade produced inward to the end of the cell and traversed by two darker streaks accompanied by rust-brown scales; a rust-brown spot lies at the end of the cell and some scales of the same colour are visible on the disc and below the middle of the fold; cilia hoary greyish. Exp. al. 18 mm. Hindwings and cilia pale brownish cinereous. Abdomen pale brownish cinereous. Legs [missing].

Type ♂ (28668) Mus. Wlsm.

HAB. OAHU: Waianae Mts., (Type) II. 1896; NW. Koolau Range (♂ ♀) VII. 1901. Three specimens.

## 49. CAPUA, Stph.

CAPUA, Stph., Ill. Br. Ent. Haust. IV. 171 (1834); Wilk., Hein., Stgr.-Wk., etc., Meyr., HB. Br. Lp. 527—8 (1895).

= *TERATODES*, Gn., Ann. Soc. Ent. Fr. XIV. (2. s.) III. 168 (1845): Ind. Meth. 34 (1845).

= *BATODES*, Gn., Ann. Soc. Ent. Fr. XIV. (2. s.) III. 174 (1845): Ind. Meth. 40 (1845).

Hein., Stgr.-Wk., etc. = *HOMONA*, Wkr., Cat. Lp. Ins. BM. XXVIII. 424 (1863).

400. (1) *Capua* (?) *flavopicta*, sp. nov. (Pl. XI. fig. 25).

Antennae brownish ochreous, faintly banded with pale brown above. Palpi very short; brownish ochreous. Head brownish, face paler. Thorax canary-yellow, smeared with brownish along the middle. Forewings canary-yellow, mottled with rich chestnut on a short oblique basal patch, narrower on the costa than on the dorsum and containing two or three groups of shining, dark steel-grey scales; a short costal streak, also obliquely placed before the middle, is rich chestnut; on the outer half of the dorsum arises a large triangular dark chestnut-brown patch, narrowly margined by a rich paler chestnut, its outer edge running parallel with the termen and reaching nearly to the apex; this is illuminated by patches of shining, dark steel-grey; termen and cilia canary-yellow, tornal cilia dark grey. Exp. al. 18 mm. Hindwings pale brownish aeneous, lighter towards the costa; cilia greyish, becoming pale yellowish towards the termen. Abdomen light brownish. Legs creamy whitish.

Type ♀ (26791) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., v. 1894. Unique.

Although the pattern of the colouring is very different there is great similarity in the colouring itself between this species and *Capua picta*, of which ♂♂ only have been received. With the material before me I do not feel justified in uniting them as sexes of one species.

401. (2) *Capua picta*, sp. nov. (Pl. XI. fig. 26).

Antennae, ♂ biserrate; brownish ochreous. Palpi very short, not projecting beyond the head, the terminal joint almost concealed in the obtusely tufted median joint; pale ochreous on their inner sides, chestnut-brown externally. Head brownish ochreous. Thorax cream-yellow, mixed with chestnut. Forewings with the costa arched before the middle, straight beyond, termen oblique, not sinuate, ♂ with a well-developed costal fold; rich chestnut-brown with pale cream-yellow patches, these commencing at the base are scattered obliquely outward from the costal fold to near the dorsum, before the middle, to the number of four or five, two nearer the base, three beyond it (including the outer half of the costal fold as one); beyond this a triangular costal patch is more conspicuous

and the cream-yellow occurs again along the termen including the cilia, except at the tornus where they are grey; the chestnut-brown colour shows a tendency to become brighter around the edges of the pale markings, but on the central portion they are illuminated by lines of shining, steel-grey scales. Exp. al. 16 mm. Hindwings greyish, with an aeneous tinge. Abdomen greyish. Legs whitish.

Type ♂ (26771) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) iv. 1895; Mts., 3000—4000 ft., (2) v. 1894, (1) vi. 1894. Four specimens, all ♂♂.

**402.** (3) *Capua* (?) *flavocincta*, sp. nov. (Pl. XI. fig. 27).

Antennae yellowish, barred above with fuscous. Palpi yellow, the median joint orange on its outer side. Head and Thorax yellow, the latter becoming fuscous posteriorly, the tegulae streaked with bright orange. Forewings tawny, with a purplish grey metallic suffusion, condensed into purplish fuscous along the inner and outer margins of a broad triangular bright orange costal patch which extends from before the middle nearly to the apex; the extreme base and the costa near the base are also touched with orange and a diffused orange band extends from the apex along the termen before the base of the yellow cilia. Exp. al. 18 mm. Hindwings pale grey; cilia pale yellowish. Abdomen pale brownish cinereous. Legs very pale cinereous.

Type ♀ (25182) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., ix. 1892. Unique.

**403.** (4) *Capua trigonifer*, sp. nov. (Pl. XI. fig. 28).

Antennae yellowish, the basal joint orange-ochreous beneath. Palpi yellow on their inner sides, orange-brown externally. Head pale yellow. Thorax yellow, with a ferruginous patch posteriorly; a patch of rich orange-ochreous at the base of the tegulae. Forewings rich ferruginous, a small yellow patch at the extreme base below the edge of the costal fold (♂), which is rich reddish orange on its basal and yellowish ochreous on its outer half; two pale yellowish ochreous patches occur beyond the middle, separated and bounded beneath by rich reddish orange which separates their lower extremities from a shining, white triangular patch at the end of the cell, its apex extending to the tornal angle of the cell; on the orange division between the two costal patches is a dark, shining, steel-grey metallic spot, a series of similar spots irregularly distributed obliquely across the wing from the middle of the costa to near the tornus as also about the apical and tornal portion; cilia with a yellowish ochreous tinge along the termen, greyish about the tornus. Exp. al. 12 mm. Hindwings and cilia brownish cinereous. Abdomen fawn-brownish. Legs whitish.

Type ♂ (25181) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., IX. 1892. Unique.

It is possible that a bred series might prove *trigonifer* and *flavocincta* to be sexes of one species, but this would be a rash assumption on the evidence afforded by two specimens so different in appearance.

**404.** (5) *Capua pleonectes*, sp. nov. (Pl. XII. fig. 1).

Antennae biciliate in ♂; pale ochreous, banded above with fuscous. Palpi projecting about the length of the head beyond it; dull ochreous, the short terminal joint fuscous. Head and Thorax dull ochreous. Forewings rather shining, ochreous, slightly mottled with brownish ochreous, the broad costal fold of the ♂ brown at the base with fuscous scales intermixed; a basal patch below it, throwing out a median angle to about one-fourth, is mixed brownish ochreous and tawny fuscous; below the outer end of the costal fold, a little before the middle, commences an outwardly oblique tawny fuscous transverse fascia, gradually dilated outward to the dorsum about the tornus and connected with a fuscous spot on its outer side at the end of the cell; on this fascia are some spots of rather shining, leaden grey scales, as also on the diffused tawny fuscous terminal shade; cilia pale greyish fuscous below the apex, ochreous above it. Exp. al. 21 mm. Hindwings brownish grey, with some darker reticulations showing through from the underside; cilia whitish cinereous, shaded along their base. Abdomen cinereous, the anal tuft inclining to ochreous. Legs pale cinereous.

Type ♂ (28070) Mus. Wlsm.

The ♀ is much larger than the ♂ and varies from pale chestnut-brown to dark chestnut-brown sprinkled with shining, purplish scales; in the darker specimen is an ochreous semi-lunate dorsal patch, but the paler variety is practically unicolorous with the exception of a tawny fuscous patch in the tornal cilia, the median fascia scarcely indicated in either specimen. Exp. al. 26—28 mm.

Co-types ♀♀ (28065, 28066) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VIII. 1896. Six specimens.

**405.** (6) *Capua castaneana*, sp. nov. (Pl. XII. fig. 2).

Antennae brownish cinereous, banded above with fuscous. Palpi reddish brown, tipped with fuscous. Head brown, the face darker. Thorax brown, anteriorly greyish fuscous above, the tegulae chestnut-brown tipped with white. Forewings chestnut-brown, with slight brownish ochreous mottling and some rather shining, blue-grey transverse lines towards the apex, and on an ill-defined oblique darker central fascia and costal shade; a distinct fuscous spot at the end of the cell, with about four less distinct

costal spots above it, alternating with paler spots between them; a broken line of white streaks, commencing about the middle of the costal fold, runs obliquely inward toward the base of the dorsum; a few white specks are visible on the extreme dorsum which is very narrowly dark fuscous; cilia chestnut-brown, somewhat paler than the wings (by a slight admixture of brownish ochreous), tornal cilia dark greyish fuscous. Exp. al. 21 mm. Hindwings tawny grey, profusely mottled with a darker shade throughout, owing to spots on the underside showing through them; cilia pale cinereous, with a re-duplicated darker shade running through them. Abdomen tawny grey, anal tuft brownish ochreous. Legs cinereous, with grey lateral bands on the tibiae and tarsi.

Type ♂ (27201) Mus. Wlsm.

The ♀ is distinctly paler, inclining to fawn-ochreous, with the ferruginous shading confined to a faintly indicated basal patch, an oblique fasciaform band, somewhat interrupted towards the tornus, and a slight subapical reticulation. Exp. al. 22 mm.

Type ♀ (28027) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., (♂) VI. 1894; Lihue, 4000 ft., (♂♀) VII. 1896. Three specimens.

**406.** (7) *Capua* (?) *glaucoviridana*, sp. nov. (Pl. XII. fig. 3).

Antennae cinereous, banded with fuscous above, the bands connected along their middle on the basal half. Palpi fuscous, externally tipped with pale cinereous. Head brownish cinereous. Thorax fuscous, sprinkled with cinereous. Forewings pale greenish cinereous, with reticulate broken patches of dark olivaceous brown; a basal patch, outwardly angulated in the middle, a broken transverse oblique fascia from the middle of the costa to the tornus, with some green scales at the end of the cell and on the fold, a triangular costal patch at one-third from the apex and a terminal patch before the tawny grey cilia. Exp. al. 16 mm. Hindwings and cilia tawny greyish. Abdomen tawny greyish. Legs dirty whitish.

Type ♀ (27681) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., IV. 1895. Unique.

**407.** (8) *Capua variabilis*, sp. nov. (Pl. XII. fig. 4).

Antennae biciliate in the ♂; cinereous, banded above with fuscous. Palpi projecting more than the length of the head beyond it; with the median joint somewhat arched, thickly clothed above, and with a slight tuft projecting beneath the terminal joint which is less than half its length; brownish, the terminal joint darker, its apex paler. Head somewhat rough above; brownish. Thorax not tufted; brownish fuscous, mottled with paler scales. Forewings, with the costa evenly arched, ♂ with a strong cuticular fold at



the base, termen slightly convex and slightly oblique; exceedingly variable in colour, the prevailing tints being hoary or greenish grey, with umber-brown or brownish fuscous suffusion; sometimes almost divided into an oblique basal patch, an oblique central fascia, and a terminal shade; sometimes obliterating the paler ground-colour over the whole dorsal or terminal half or two-thirds of the wing-surface: [Var. A] the pale green-grey ground-colour, speckled with brownish fuscous, forms an oblique band between the irregularly angulated basal patch and the central fascia and reappears between this and the apical suffusion but does not reach the termen which is also completely suffused in conjunction with the central fascia at the tornus where only a few greenish scales are visible, there are also two or three small pale costal spots before the apex; cilia brownish fuscous. Exp. al. (♂) 20—28 (♀) mm. Hindwings and cilia tawny brownish. Abdomen tawny brownish. Legs cinereous, with tawny brown shades and tarsal blotches.

Type ♂ (26312) *Molokai*, Mus. Wlsm.

Var. B: the whole wing-surface is suffused with brownish fuscous, bedewed with shining, tawny bluish mottling, the hoary whitish ground-colour showing only in three costal patches, each interrupted by a dark spot on the margin, and in one smaller patch at the apical angle of the cell.

Paratype ♀ (26563) *Maui*, Mus. Wlsm.

Var. C: the basal patch is bounded by an oblique white band, dilated towards the dorsum and interrupted by a dark costal dot; there is also a pale patch on the middle of the costa interrupted by a dark spot, with three smaller pale costal spots beyond it, a small white spot also lies at the end of the cell.

Paratype ♂ (26566) *Maui*, Mus. Wlsm.

Var. D: the pale markings are scarcely traceable, but are situated as in Var. C, although extending across the basal patch to the dorsum.

Paratype ♂ (26385) *Molokai*, Mus. Wlsm.

Var. E: the ground-colour is pale buff-brown and the darker markings are much mixed with rich chestnut-brown, especially visible on the upper halves of the basal patch and central fascia and in a costal patch at the outer third as well as in the apical cilia; the central fascia is connected at the tornus with the terminal suffusion which extends to the apex; there is a distinct dark tawny fuscous spot at the posterior extremity of the thorax, but I can see no sufficient ground for separating this specimen from those above described although its general colour and appearance is somewhat dissimilar.

Paratype ♀ (26359) *Molokai*, Mus. Wlsm.

HAB. MOLOKAI: 4000 ft., (1) 23. v. 1893, (2) vi. 1896, (1) 17. ix. 1893, above 4500 ft., (1) 11. ix. 1893, (3) 23. ix. 1893; Kahanui, (1) 11. viii. 1893.—MAUI: Haleakala, 5000 ft., (3) iii. 1894, (5) x. 1896; Olinda (Haleakala), 4000 ft., (1) iv. 1894. Eighteen specimens.

**408.** (9) *Capua ochreocuprea*, sp. nov. (Pl. XII. fig. 5).

Antennae shortly biciliate ; pale cinereous, transversely banded about with fuscous. Palpi projecting the length of the head beyond it, somewhat triangular ; dull cinereous. Head and Thorax dull cinereous. Forewings reddish brown, blotched or mottled indistinctly with shades of dark brownish ochreous and suffused with a thick sprinkling of shining, olivaceous grey scales arranged in transverse lines towards the apex, the broad costal fold in the ♂ having a somewhat richer tint than the wing-surface, tending to chestnut-brown : in Var. A a strong snow-white spot lies at the tornal angle of the cell (this is absent in Var. B, in which the brownish ochreous mottling is more distinctly visible in a large dorsal patch and on the outer end of the fold as well as towards the apex, the intermediate spaces inclining to tawny fuscous and therefore decidedly darker than the reddish brown of Var. A); the cilia correspond with the darker shade in each case, but are tipped with ochreous along the middle of the termen. Exp. al. 18—19 mm. Hindwings (in both varieties) pale brownish ochreous, margined and slightly speckled with a darker tawny shade ; cilia brownish ochreous, with a dark tawny shade running through them. Abdomen brownish ochreous. Legs whitish ochreous.

Type ♂ (26931) ; Paratype Var. B ♂ (26710) Mus. Wlsm.

The ♀ is larger than the ♂, and shows the tawny fuscous tinge of Var. B in an oblique basal patch, not well-defined and connected along the costa with a narrow oblique transverse fascia which is also connected at both extremities with a broad apical and terminal shade of the same colour, the intermediate spaces dull brownish ochreous ; the hindwings are also somewhat more broadly margined than in the ♂. Exp. al. 25 mm.

Type Var. B ♀ (27264) Mus. Wlsm.

HAB. KAUAI : Mts., 3000—4000 ft., VI. 1894. Seven specimens.

**409.** (10) *Capua fulva*, sp. nov. (Pl. XII. fig. 6).

Antennae, Palpi and Head tawny fuscous. Thorax dark tawny fuscous. Forewings dark tawny fuscous ; on the costa, commencing at the middle, is a dark brownish ochreous triangular blotch reaching nearly to the apex, nucleated with dark tawny fuscous on the margin ; at its lower angle a small snow-white spot with a larger one below it at the tornal angle of the cell ; some rather shining, grey scales are bestrewed over the basal and terminal portions of the wing ; cilia tawny, with a slight cupreous gloss. Exp. al. 20 mm. Hindwings unicolorous brownish cupreous ; cilia pale cinereous. Abdomen brownish cupreous. Legs pale cinereous.

Type ♂ (27012) Mus. Wlsm.

Var. B with the costal blotch and white spots absent. Paratype ♂ (27263) Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895; Mts., 3000—4000 ft., (2) VI. 1894. Three specimens.

It is not impossible that these may be varieties of *Capua ochreocuprea*, but the unicolorous dark hindwings appear to separate them.

### 50. EPAGOGÉ, Hb.

Type 1. *Pyralis grotiana*, F. (Stph. 1834).

EPAGOGÉ, Hb., Verz. bek. Schm. 389 (1826); Stph., Ill. Br. Ent. Haust. IV. 79—80 (1834), 420 (1835); Meyr., HB. Br. Lp. 527 (1895).

= *DICHELIA*, Gn., Ann. Soc. Ent. Fr. XIV. (2. s.) III. 141 (1845); Ind. Meth. 7 (1845); Stph., List. Br. An. BM. x. Lp. 9 (1852); Wilk., Ld., Hein., Stgr.-Wk., etc.

Type 2. *Hastula hyerana*, Mill.

= *HASTULA*, Mill., Ann. Soc. Ent. Fr. XXVI. (3. s.) V. 799—802 (1858).

### 410. (1) *Epagoge infaustana*, sp. nov. (Pl. XII. fig. 7).

Antennae cinereous, faintly banded above. Palpi short and stout, with the terminal joint depressed; dark brownish. Head and Thorax dark cinereous, the latter with a bluish gloss. Forewings dark cinereous, with a bluish gloss and some brownish cupreous transverse strigulae across the basal third and a slight cupreous sheen about the termen and tornus; an outwardly angulated basal patch is faintly indicated by a line a little darker than the ground-colour, and is followed by a rather more clearly defined median fascia, also bowed outwards and narrowly dark-margined; at two-thirds from the base a narrow darkened line, much bent outward from the costa and recurved to within the tornus, cuts off the terminal and apical portion of the wing which is faintly reticulate, with a cupreous sheen; cilia mixed with bluish grey and cupreous. Exp. al. (♂) 12—14 (♀) mm. Hindwings and cilia shining, pale greyish. Abdomen pale cinereous. Legs bone-whitish, the tarsi faintly mottled.

Type ♀ (26945); ♂ (26843) *Kauai*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (2) IV. 1895; Mts., 3000—4000 ft., (7) V. 1894, (4) VI. 1894.—MOLOKAI: above 3000 ft., (1) 24. VI. 1893.—MAUI: Haleakala, 5000 ft., (1) V. 1896.—HAWAII: Mt. Kilauea, (1) VII. 1895, (3) VIII. 1896; Olaa, (1) VII. 1895; Kona, above 2000 ft., (4) excl. IX. 1892; Olaa, 2000 ft., (3) XI. 1896. Twenty-seven specimens.

There is some pale mottling on the costa on the underside of the forewings, and the underside of the hindwings is delicately reticulate with darker grey on their outer half. In the ♂ the markings are sometimes of a paler colour and consequently appear more distinct.

**411.** (2) *Epagoge* (?) *xanthogona*, sp. nov. (Pl. XII. fig. 8).

Antennae chocolate-brown, with faint pale annulations toward the base. Palpi very short, not projecting beyond the head; chocolate-brown, with a few pale scales at their outer extremity. Head chocolate-brown. Thorax dark chocolate-brown, tegulae pale straw-yellowish. Forewings dark chocolate-brown, pale straw-yellowish along the costa to one-fourth from the base, with a slight indication of a dark chocolate band forming the outer edge of a short outwardly angulated basal patch, beyond which a slight admixture of brownish ochreous scales makes the basal third to the dorsum somewhat paler than the outer portion of the wing; in the dark outer portion is a conspicuous triangular pale yellowish costal patch; cilia rusty brown, tinged with yellowish on their outer half. Exp. al. 14 mm. Hindwings chocolate-brown; cilia scarcely paler. Abdomen dark chocolate-brown. Legs brownish cinereous.

Type ♀ (25358) Mus. Wlsm.

HAB. HAWAII: Kona, 4000 ft., VII. 1892, 5000 ft., 4. VII. 1892. Two specimens.

**412.** (3) *Epagoge* (?) *pernitida*, sp. nov. (Pl. XII. fig. 9).

Antennae cinereous, neatly banded above with fuscous. Palpi extending the length of the head beyond it; olivaceous ochreous. Head dull olivaceous ochreous. Thorax dark greyish. Forewings pale olivaceous ochreous on the outer half, shaded with olive-brownish in an oblique fascia across the middle, the basal third shining, silvery grey; the basal area possesses a chestnut-brown patch at the base of the costa, succeeded by a minute chestnut costal spot, and the silvery metallic gloss is tinted towards the base with lilac, and mottled with olive-brownish along the dorsum; the oblique clouded fascia is chestnut-brown on the costa, fading to olive-ochreous upon the disc and darkened again to olive-brown thence to the dorsum, where it is outwardly bounded by a patch of shining, lilac-grey scales, a streak of shining, silvery grey beyond it pointing upward and outward to the tornus; a similar silvery streak, outwardly oblique, bounds the costal extremity of the central fascia, and is itself bounded externally on the costa by a small chestnut shade; terminal cilia at their base bright chestnut, on their outer half whitish, a small fuscous spot at the tornus. Exp. al. 17 mm. Hindwings dull greyish brown; cilia becoming pale brownish cinereous on their outer half. Abdomen and Legs greyish brown; the tarsi with faint pale annulations.

Type ♀ (28641) Mus. Wlsm.

HAB. HAWAII: Oloo, 2000 ft., XI. 1896. Unique.

A single ♂ (28616) in very poor condition, taken at Hilo, 2000 ft., I. 1896, is closely allied to *pernitida*.

**413.** (4) *Epagoge* (?) *argentinotata*, sp. nov. (Pl. XII. fig. 10).

Antennae brownish fuscous, paler beneath. Palpi chestnut-brown. Head and Thorax chestnut-brown. Forewings rich chestnut-brown, fading into a paler tint, partially suffused with steel-grey scales about the base of the cell and below the fold; on the costa near the base is a spot of bright steel-grey scales, almost immediately followed by a broad yellowish silvery band, attenuated somewhat obliquely outward and abruptly terminated on the fold; a little beyond the middle is a short and narrower oblique silvery costal patch, a minute costal spot appearing before the apex and another at the tornal angle of the cell; at the tornus is an erect attenuate steel-grey streak; cilia yellowish silvery, touched with chestnut-brown at the apex and near the tornus. Exp. al. 16—17 mm. Hindwings and cilia brownish grey. Abdomen and Legs brownish grey.

Type ♀ (27514) Mus. Wlsm.

HAB. HAWAII: Olaa, VI. 1895; Hilo, 2000 ft., I. 1896. Two specimens.

## VI. TINEIDAE.

**51.** OPOSTEGA, Z.

OPOSTEGA, Z., Isis **1839**, 214; Meyr., HB. Br. Lp. 728, fig. (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 220, No. 433 (1901), etc.

**414.** (1) *Opostega maculata*, sp. nov. (Pl. XXV. fig. 12).

Antennae greyish; eye-caps white. Head white. Thorax tinged with grey. Forewings shining, cream-white, a grey dorsal patch at the base is followed by a mixed brown and greyish outwardly oblique patch about the middle of the dorsum, its outer extremity opposite to a short outwardly oblique brownish costal spot beyond the middle; before the apex are two slender dark brown and grey costal streaklets meeting on a small blackish apical spot from which another streaklet runs outward through the sub-apical cilia; cilia white, shading to grey on the dorsum; underside with a naked space towards the base. Exp. al. 8 mm. Hindwings and cilia pale brownish grey. Abdomen brownish grey above, whitish beneath. Legs grey.

Type ♂ (26184) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 30. V. 1893. Unique.

**415.** (2) *Opostega dives*, sp. nov. (Pl. XXV. fig. 13).

Antennae fuscous; eye-caps silvery white. Head yellowish, shading to grey posteriorly. Thorax iridescent, coppery. Forewings dark iridescent bottle-green, with a rich iridescent coppery gloss beyond the middle; apical cilia greyish, with three pale fuscous streaklets radiating upward from a dark fuscous apical spot which has also

a curved fuscous line on its outer side; tornal and dorsal cilia greyish fuscous, with a coppery sheen along their base; underside with a naked patch towards base. Exp. al. 11 mm. Hindwings and cilia dark tawny brownish grey. Abdomen fuscous. Legs greyish fuscous.

Type ♂ (27570) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Two specimens.

The hairs on the hind legs are longer and scarcely so bristly as in *maculata* and other species of this genus, but it agrees in neuration and general structure.

## 52. OPOGONA, Z.

n. synn. = § *LOZOSTOMA*, Stn.; = *CACHURA*, Wkr.

Type 1. *Opogona dimidiatella*, Z. (Z. 1853).

OPOGONA, Z., Bull. Soc. Imp. Nat. Mosc. XXVI. (2), 504—7, Pl. IV. 13—16 (1853).

1 (Type) *dimidiatella*, Z.

Stgr., Berl. Ent. Zts. XIV. 325 (1870); Stgr-Wk., Cat. Lp. Eur. 335, No. 300 (1871); F. & R., Reise Nov. Lp. v. expl. Pl. 139. 8 (1875); Moore, Lp. Ceyl. III. 526 (1887); Swinh. & Cotes, Cat. Moths Ind. 723 (1889); Stgr.-Rbl., Cat. Lp. Pal. II. 220, No. 432 (1901).

Type 2. *Lozostoma flavofasciata*, Stn.

† § *LOZOSTOMA*, Stn., Tr. Ent. Soc. Lond. (n. s.) v. 124 (1859).

1 *flavofasciata*, Stn. 2 *semisulphurea*, Stn.

Wkr., Cat. Lp. Ins. BM. XXX. 1041 (1864); Moore, Pr. Z. Soc. Lond. 1867, 671; Swinh. & Cotes, Cat. Moths Ind. 722 (1889); Meyr., Pr. Lin. Soc. NSW. XXII. 298, 415, No. 31 (1897).

[*flavofasciata*, Stn., may be taken as the type of *LOZOSTOMA* († *LOXOSTOMA*), Stn., but this name is invalid through homonymy with *LOXOSTOMA*, Biv. (1838) *Moll.*]

Type 3. *Cachura objectella*, Wkr. (Wkr. 1864).

*CACHURA*, Wkr., Cat. Lp. Ins. BM. XXX. 918 (1864).

1 (Type) *objectella*, Wkr.

Moore, Lp. Ceyl. III. 526 (1887); Swinh. & Cotes, Cat. Moths Ind. 723 (1889).

Zeller when describing *Opogona* remarked that although at first sight *dimidiatella* appeared to be an *Elachista* allied to *modestella*, Dp. [i.e. *Asychna*, Stn.] its nearest ally was *Oenophila v-flavum*, Hw. Staudinger (Berl. Ent. Zts. XIV. 325) regarded *Opogona* as intermediate between *Bucculatrix*, Z. and *Phyllobrostis*, Stgr.

Staudinger and Rebel (Cat. Lp. Pal. II. 220) place *Opogona* in *Lyonetiadae* between *Bucculatrix* and *Opostega*, thus following Staudinger and Wocke (Cat. Lp. Eur. 335), but removing *Opostega* from the *Nepticulidae* to the *Lyonetiadae*.

Walker placed his genus *Cachura* at the end of the *Lyonetiadae* following *Bucculatrix*, with *Leucanthiza*, Clms., intervening.

Stainton described *Lozostoma* as one of the *Elachistidae* allied to *Cosmopteryx*, Hb., [*Lozostoma* (§ *Loxostoma*) is invalid being homonymous with *Loxostoma*, Biv. (1838) *Moll.*]. Meyrick (Pr. Lin. Soc. NSW. xxii. 415) followed Stainton in referring *Lozostoma* to the *Elachistidae* which he defined as having "Maxillary palpi rudimentary," but *Opogona dimidiatella*, Z., and *panchalcella*, Stgr., *Lozostoma flavofasciata*, Stn., and *sterodyta*, Meyr., etc., *Cachura objectella*, Wkr., *Argyresthia* (?) *aurisquamosa*, Btl., and various Malaysian and Australian species all agree in having the maxillary palpi strongly developed and folded. It therefore follows that *Opogona*, Z. (= *Lozostoma*, Stn.) is approximately correctly located in the *Tineidae* in the neighbourhood of *Opostega*, Z., while its nearest ally is perhaps *Dendroneura*, Wlsm. (Pr. Z. Soc. Lond. 1891, 509—10, Pl. XLI. 6) which is apparently an older and less specialised form than either *Opogona* or *Opostega*.

*Opogona aurisquamosa*, Btl., has been bred from sugar-cane and banana in Hawaiiia and *subcervinella*, Wkr. (n. syn. = *plumipes*, Btl.) is noted as injurious to developed sugar-canes and in potatoes and other stored tubers in Mauritius. Unfortunately we have no exact record of the habits of either species, but van Deventer [Tijd. Ent. xlvii. 83—4, Pl. X. 1<sup>a-b</sup> (1904)] figures and describes the larva of *Opogona fumiceps*, F. & R., feeding on the Kokos-palm in Java.

Meyrick [HB. Br. Lp. 728 (1895)] remarks of *Opostega* "Larva almost unknown," which sums up concisely the present state of our knowledge of this genus.

Stainton [Ent. Ann. 1868, 133] mentions the breeding of a crippled specimen of *Opostega auritella*, Hb., from flower-stalks of *Caltha palustris* by Sleich, and Büttner [Stett. Ent. Ztg. xli. 468, No. 2966 (1880)] records the breeding of a second cripple by Knaack from the same plant. Warren [Ent. Mo. Mag. xxv. 145 (1888)] states that he had by chance bred two specimens of *salaciella*, Tr. (these apparently fed among the flowers, or in the flower-stalks, of *Rumex acetosella*) and suggests that *crepusculella*, Z., may feed in *Mentha palustris*, and *spatulella*, HS., in the flower-stalks of Wych-elm.

**416.** (1) *Opogona aurisquamosa*, Btl. (Pl. XXV. fig. 14).

*Argyresthia* (?) *aurisquamosa*, Btl., Ann. & Mag. NH. (5. s.) vii. 403—4, No. 43 (1881)<sup>1</sup>.

Antennae very pale fawn-ochreous (almost whitish), the basal joint somewhat dilated and flattened, whiter than the stem. Palpi pale fawn-ochreous above, straw-white beneath. Head shining, pale fawn-brown; face shining, steel-white. Thorax shining, varying from brown to deep purplish. Forewings iridescent, dark purple,

varying to pale fawn-brownish (but chiefly in worn or greasy specimens), with minute transverse lines of golden scales, more noticeable towards the apex than on the basal half, these coalesce in some specimens forming a costal spot before the apex, and occasionally a dorsal spot near the end of the fold; cilia dull pale brownish ochreous, varying to grey. Exp. al. 12—14 mm. Hindwings shining, bronzy greyish, with bright aeneous sheen around the margins, silvery white on the costa about the base; cilia dull pale brownish ochreous. Abdomen shining, pale fawn-brownish, varying to dark purplish grey. Legs pale ochreous.

Type ♀ (42 : 81. 7) *Oahu*, Mus. Br. [Caenotypes ♀ (25269); ♀ (25375); ♀ (28654); ♀ (27516) Mus. Wlsm.]

HAB. HAWAIIA. KAUAI: Mts., 3000—4000 ft., VI. 1894 (Perkins).—OAHU: near Honolulu (Blackburn)<sup>1</sup>; Waialua (beach), III. 1892; Waianae Mts., IV. 1892, “generally on ‘Kukui’ trees (*Aleurites triloba*) also found on plains” (Perkins).—MOLOKAI: 12. VI. 1893; Kahanui, IX. 1893 (Perkins).—LANAI: 2000 ft., II. 1894 (Perkins).—HAWAII: Kona, 2000 ft., VI. 1892, 3000 ft., VI., IX. 1892; Kaawaloa (Kona), 1500 ft., IX. 1892; Olaa, 2000 ft., VI. 1895, XI. 1896 (Perkins).—Two specimens, determined for the U.S. National Museum: pale form (Drnt. Det. 4926: 1900) labelled “Larva Banana, Sandwich Ids.”; dark form (Drnt. Det. 4952: 1900) labelled “from Sugar Cane, Sandwich Ids., ex 25. VIII. 1888.” E. PACIFIC. MARQUESAS IS.: O-Hiva-Oa Id., 14. III. 1883 (2819, J. J. Walker).—SOCIETY IS.: Tahiti, mountain forests, about 3000 ft., 10—19. V. 1883 (2874, J. J. Walker).

### 53. EREUNETIS, Meyr.

= *DECADARCHIS*, Meyr.<sup>3</sup>

Type 1. *Ereunetis iulopiera*, Meyr.

EREUNETIS, Meyr., Pr. Lin. Soc. NSW. v. 258 (1880)<sup>1</sup>; Tr. NZ. Inst. XX. 92 (1888)<sup>2</sup>; Pr. Lin. Soc. NSW. (2. s.) VII. 480, 562—3 (1893)<sup>3</sup>.

Type 2. *Tinea simulans*, Btl. (Meyr. 1886).

= *DECADARCHIS*, Meyr., Tr. Ent. Soc. Lond. 1886, 290—1.

1 (Type) *simulans*, Btl. (= *melanastra*, Meyr.).



**417.** (1) *Ereunetis simulans*, Btl. (Pl. XXV. fig. 15).

n. syn. = *melanastra*, Meyr.

*Tinea simulans*, Btl., Tr. Ent. Soc. Lond. 1882, 43—4'. *Decadarchis melanastra*, Meyr., Tr. Ent. Soc. Lond. 1886, 291<sup>2</sup>.

Antennae white, annulate with brownish cinereous, basal joint white. Palpi porrect, with large expanding brush beneath, extending to the tip; white. Head white. Thorax white, with a blackish spot on the anterior margin and another posteriorly; the base of the tegulae blackish. Forewings creamy white, with large clearly defined blackish spots or patches (varying in different specimens); the first near the base of the costa extends obliquely outward and is narrowly connected along the extreme margin with a large quadrangular costal patch, at one-third, reaching to the fold and there connected at its inner angle with a small patch below the fold; near the base is a small triangular dorsal patch opposite the first costal; scarcely beyond the middle is a smaller quadrangular costal patch, followed half-way to the apex by an irregularly triangular costal patch with serrate inner margin (its apex sometimes connected narrowly with the terminal shading), between these two, but below them, is a distinctly triangular patch on the lower angle of the cell, its apex reaching nearly to the fold; two smaller dentate dorsal patches tend obliquely outward, the first about the middle, the second about the tornus; a roundish patch at the upturned apex of the wing is partly connected by scattered scales with a less distinct diffused patch on the middle of the termen; cilia white, tinged with fuscous on the middle of the termen, a fuscous line running through their middle. Exp. al. 20—23 mm. Hindwings and cilia rather shining, pale brownish cinereous. Abdomen and Legs pale brownish cinereous, the tarsal joints whitish, slightly spotted with brown.

Types *simulans*, Btl. (159: 82. 9) Mus. Br.; *melanastra*, Meyr., ♀ Mus. Lucas. [Caenotype ♂ (27520) Mus. Wlsm.]

HAB. HAWAIIA. OAHU: Honolulu (Blackburn)<sup>1</sup>; Mts., 2000 ft., near Honolulu (Perkins 1886); Panoa Valley, III. 1895 (Perkins). Three specimens. E. PACIFIC. MARQUESAS IS.: Nuka Hiva Id., 16—22. III. 1883 (J. J. Walker). W. PACIFIC. FIJI IS. (Lucas)<sup>2</sup>: Viti Levu Id., Suva (C. M. Woodford).

**418.** (2) *Ereunetis zebrina*, Btl. (Pl. XXV. fig. 16).

*Argyresthia zebrina*, Btl., Ann. & Mag. NH. (5. s.) VII. 403, No. 42 (1881)<sup>1</sup>.

Antennae cream-white, basal joint fuscous. Palpi short, dependent, median joint fuscous; terminal joint as long as the median, white. Head dark fuscous in front, whitish above. Thorax whitish. Forewings cream-white, with three outwardly oblique dark fuscous costal patches; the first two reaching to the fold, the third produced to the

apex but leaving a distinct narrow fuscous line along the base of the cream-white cilia in which there is a large dark brownish fuscous spot at the extreme apex. Exp. al. 8 mm. Hindwings as broad as the forewings, broadly lanceolate; very pale grey; cilia whitish. Abdomen whitish ochreous. Legs creamy whitish, with three fuscous tarsal spots.

Type ♀ (74 : 81. 7) Mus. Br. [Caenotype ♂ (26015) Mus. Wlsm.]

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>; Waianae Mts., about 2000 ft., IV. 1892. Two specimens.

Very similar in appearance to the West Indian *Ereunetis lanceolata*, Wlsm.

**419.** (3) *Ereunetis minuscula*, Wlsm. (Pl. XXV. fig. 17).

*Ereunetis minuscula*, Wlsm., Pr. Z. Soc. Lond. 1897, 155—6, No. 246 (1897)<sup>1</sup>.

“Antennae rather stout, enlarged at the base, simple in the ♂; creamy white. Palpi projecting more than the length of the head beyond it, brush-like beneath; creamy white. Head rough; cream-coloured. Thorax cream-coloured. Forewings cream-coloured, more or less shaded and speckled with umber-brown, this shading being concentrated (and therefore more conspicuous) from the base along the first half of the fold, from beyond the middle of the costa to the lower angle of the cell, and in a subapical oblique costal streak; a dark fuscous streaklet immediately before the extreme apex is preceded by a whitish costal patch; the termen deeply incised below and opposite to it, causing the apex of the wing to turn up sometimes almost at right-angles to its surface; cilia creamy whitish, with a slender reduplicated umber-brown line close to their tips. Exp. al. 9 mm. Hindwings, ♂ with a hyaline patch at the base; pale golden yellowish, sometimes with a cupreous tinge; cilia whitish, with a slight golden or cupreous tinge, a slender reduplicated curved line of umber-brown running through them around the extreme apex. Abdomen whitish ochreous. Legs creamy white.” [Wlsm.<sup>1</sup>]

Type ♂ (7084); ♀ (7085) *St. Thomas*, Mus. Wlsm.

HAB. WEST INDIES. JAMAICA: Kingston, 26. VII.<sup>1</sup>—ST. CROIX: 22—28. IV.<sup>1</sup>—ST. THOMAS: 7. III.—22. IV.<sup>1</sup>—GRENADA: Balthazar, 250 ft., windward side, 30. IV.<sup>1</sup> [COLOMBIA? (Nolcken)<sup>1</sup>]. HAWAIIA. OAHU: Waianae Mts., IV. 1892, on tree-trunks. —HAWAII: Kaawaloa (Kona), 1500 ft., VI., IX. 1892. Twenty specimens.

**420.** (4) *Ereunetis flavistriata*, sp. nov. (Pl. XXV. fig. 18).

Antennae yellowish white, with two small grey spots above before the apex. Palpi yellowish white, brush-like beneath; the terminal joint very short. Head and Thorax yellowish white. Forewings yellowish white, indistinctly streaked with broken yellow

lines along the fold, along the cell, and below the costa beyond the middle ; also sparsely speckled with black scales, especially beyond the middle ; a short blackish streak at the upturned apex runs to the end of the apical cilia and is joined by a slender golden brown streak along the base of the shining, white costal cilia ; terminal cilia whitish cinereous, with a blackish spot in their middle below the apex. Exp. al. 14 mm. Hindwings shining, pale golden yellowish, becoming white at the apex ; cilia pale yellowish grey. Abdomen and Legs yellowish white.

Type ♀ (26442) Mus. Wlsm.

HAB. LANAI : 2000 ft., II. 1894. Unique.

#### 54. PHILODORIA, gen. nov.

(φιλοδορία = bounteousness.)

Type *Philodoria succedanea*, Wlsm.

Antennae a little longer than the forewings, simple, without pecten. Labial Palpi long, curved, drooping, divergent, smooth ; terminal joint almost as long as the median. Maxillary Palpi obsolete. Haustellum well-developed. Ocelli present. Head and Thorax smooth. Forewings narrow, elongate, lanceolate : neuration 12 veins all separate ; 2, 5 and 6 weak ; 7 to costa. Hindwings narrow, lanceolate, acute ; cilia  $3\frac{1}{2}$  : neuration 7 veins (3 and 4 coincident) ; 2 and (3 + 4) stalked ; cell open between 4 and 5 ; 5 and 6 stalked out of 7 ; 8 short. Abdomen slender. Legs, hind tibiae smooth.

This genus is closely allied to *Gracilaria*, Hw., but differs in the absence of the maxillary palpi.

#### 421. (1) *Philodoria succedanea*, sp. nov. (Pl. XXV. fig. 19).

Antennae shining, tawny fuscous. Palpi shining, bronzy grey. Head shining, bronzy. Thorax aeneous. Forewings bright orange-ochreous ; with a basal patch reaching to one-third, shining, metallic aeneous, except along the costa where a black triangular patch extends to two-thirds of its length ; the outer edge of the basal patch tends obliquely outwards from costa to dorsum and is narrowly edged with black which connects it along the dorsum with the narrow black inner margin of an oblique, brilliant metallic aeneous fascia about the middle of the wing ; this is also obliquely placed, its upper half narrower than the dorsal half and tinged with steel-blue, it is also narrowly margined externally with black, forming a slight angle on the fold ; beyond this is a narrowly black-margined, steel-blue costal spot which is succeeded by a second transverse aeneous fascia, steel-blue at its upper extremity, obliquely inverted from costa to dorsum and dilated on and below the fold, its narrowly black inner margin

also somewhat dilated inward on the fold; connected with the black outer margin of this fascia is a black patch extending toward the termen and apex, but exhibiting along its outer edge a bright aeneous sheen reaching to the base of the shining terminal and apical cilia, tornal cilia tawny. Exp. al. 9—10 mm. Hindwings dark tawny; cilia tawny. Abdomen tawny above, silvery beneath. Legs tawny, with silvery spurs and slightly paler tarsi.

Type ♀ (26695); ♂ (28505) Mus. Wlsm.

HAB. [? KAUAI: Mts., 3000—4000 ft., (1) VI. 1894].—MAUI: Olinda (Haleakala), 4000 ft., (9) IV. 1894, V. 1896; Haleakala, below 4000—5000 ft., (9) V. 1896. Nineteen specimens.

In some specimens the black dorsal edging connecting the basal patch with the first fascia extends to above the fold and the yellow ground-colour encroaches on the black apical patch.

The single specimen from Kauai (27297) is in very poor condition and perhaps not distinct from the Maui series.

**422.** (2) *Philodoria auromagnifica*, sp. nov. (Pl. XXV. fig. 20).

Antennae dark fuscous. Palpi pale cinereous. Head and face dark steely fuscous. Thorax dark brownish orange, becoming fuscous posteriorly. Forewings dark brownish orange, mixed with dark fuscous, with three transverse fasciae and one small costal spot beyond the middle, all brilliant golden, shining, metallic lilac; the first fascia is at about one-fourth, widening toward the dorsum; the second, also wider toward the dorsum, is bent back to the costa from about the middle of the wing; the third, arising on the dorsum before the tornus, is attenuated obliquely outward to the costal cilia; these fasciae are all margined with dark fuscous shading which also connects the first with the base and with the second along the dorsum, while it overspreads the middle of the wing between the second and third and the whole apical portion beyond the third; cilia shining, dark bronzy grey. Exp. al. 8 mm. Hindwings and cilia dark tawny fuscous. Abdomen and Legs fuscous above, whitish beneath.

Type ♂ (25857) Mus. Wlsm.

HAB. OAHU: Mts., near Honolulu, 2000 ft., 25. x. 1892. Unique.

**423.** (3) *Philodoria floscula*, sp. nov. (Pl. XXV. fig. 21).

Antennae brownish. Palpi white, a dark spot at the end of the median joint, the terminal joint also shaded with fuscous. Head brownish grey above; face white. Thorax bronzy brown. Forewings bronzy brown, with four rather outwardly oblique, shining, silver-white marginal streaks; one dorsal before the middle crossing the fold, one costal

about the middle, and an opposite pair at one-fourth from the apex, between them a shining, pale green metallic patch, beyond which the apex is bright orange with a black spot before the shining, green cilia; tornal cilia tawny grey. Exp. al. 8 mm. Hindwings tawny brown; cilia tawny. Abdomen fuscous above, whitish beneath. Legs brownish.

Type ♂ (28597) Mus. Wlsm.

HAB. HAWAII: Olaa, IX. 1896; Hilo, 2000 ft., XII. 1895. Two specimens.

**424.** (4) *Philodoria micropetala*, sp. nov. (Pl. XXV. fig. 22).

Antennae brownish. Palpi white, a dark spot at the end of the median joint, the terminal joint also shaded with fuscous. Head and Thorax bronzy brown. Forewings bronzy brown, with four white spots; the first on the outer half of the fold, not touching the dorsum; the second on the costa beyond the middle, pointing obliquely outward and dark-margined externally; the other two situated as in *floscula*, but dark-margined on their inner sides, the metallic spot between them being bright steel-blue; beyond this an orange spot, with three white streaks in the costal cilia above it, alternate with brownish, a few fuscous scales scattered across the middle of this patch terminate in a blackish spot at its outer edge, followed by shining, steel-blue, which extends through the terminal and apical cilia. Exp. al. 8 mm. Hindwings tawny brown; cilia tawny. Abdomen fuscous above, whitish beneath. Legs brownish, spurs and a few tarsal spots whitish.

Type ♀ (27560) Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., v. 1895. Unique.

This species differs from *floscula*, which it greatly resembles, in the slight separation of the plical white spot from the dorsum (this spot is erect, not oblique); in the white spots being only rather shining, pearly white (by no means bright silvery metallic white as in the other species); in the presence of three white costal streaks in the cilia above the orange patch, in the slightly shaded and less brilliant appearance of this patch itself, and in the distinctly bluer colour of the metallic scales before and beyond it.

**425.** (5) *Philodoria splendida*, sp. nov. (Pl. XXV. fig. 23).

Antennae greyish fuscous. Palpi whitish. Head and Thorax leaden grey; face paler. Forewings with a shining, pale leaden grey patch along one-fifth of the dorsum, connected at the base with a band of the same colour extending along the costa to one-third and thence crossing the wing somewhat obliquely outwards to the dorsum a little before the middle, the space enclosed being dark brownish ochreous; a slightly oblique dark brownish ochreous fascia crosses the middle of the wing, narrowly

dark-margined on either side, and is succeeded by a second, shining, pale leaden grey fascia, running parallel with it but rather narrower than itself, this is narrowly dark-margined externally; beyond this the ground-colour of the wing is dull brownish ochreous, containing a small pale leaden grey half-fascia commencing before the costal cilia and narrowly dark-margined on either side, a small costal spot of the same colour, narrowly dark-margined anteriorly, and a large black terminal patch from tornus to apex containing two upright shining, coppery (or metallic green) spots, with a bright silvery dot between them, the termen narrowly bright metallic green; cilia shining, pale aeneous, blackish at the tornus. Exp. al. 8—9 mm. Hindwings coppery brown; cilia tawny. Abdomen tawny brown, silvery beneath. Legs greyish fuscous, with white spots on the tarsal joints and at the ends of the tibiae; spurs white.

Type ♂ (26430) *Lanai*, Mus. Wlsm.

HAB. KAUAI: Halemanu, 4000 ft., (1) v. 1895; Mts., 3000—4000 ft., (1) vi. 1894.—OAHU: Waianae Mts., 2000 ft., (1) beaten from "Lehua" (*Metrosideros polymorpha*?) iv. 1892; Mts., near Honolulu, 2000 ft., (1) 25. x. 1892.—MOLOKAI: Kalae, 1500 ft., (1) v. 1893; Mts., about 4000 ft., (1) 9. vi. 1893.—LANAI: 3000 ft., (2) ii. 1894; 2000 ft., (1) vii. 1894, (1) xii. 1894. Ten specimens.

**426.** (6) *Philodoria basalis*, sp. nov. (Pl. XXV. fig. 24).

Antennae greyish fuscous. Palpi greyish fuscous externally, whitish on their inner sides. Head leaden grey; face whitish. Thorax greyish fuscous. Forewings with a leaden grey patch covering the whole base, reaching to one-third along the costa and to nearly half the length of the dorsum, its oblique outer edge narrowly margined with greyish fuscous; this is succeeded by a transverse oblique dark brownish ochreous band, beyond which is a narrow, oblique, shining, steel-grey fascia narrowly dark-margined on either side and slightly angulated a little above the fold; beyond this the ground-colour is pale brownish ochreous, containing two short, shining, steel-grey costal streaks, narrowly dark-margined, and a large jet-black terminal patch, reaching from tornus to apex, containing two upright steel-grey streaks near its opposite extremities, and a single bright silvery dot in its middle; a very narrow ochreous line separates it along the middle from the termen above the tornus; cilia shining, leaden grey. Exp. al. 9—10 mm. Hindwings tawny blackish; cilia tawny greyish. Abdomen greyish fuscous above, banded with white beneath. Legs pale greyish fuscous, spurs white.

Type ♂ (26666) Mus. Wlsm.

HAB. MAUI: Olinda (Haleakala), 4000 ft., iv. 1894, v. 1896. Two specimens.

Closely allied to *splendida*, which differs essentially in the brownish ochreous space within the basal patch.

**427.** (7) *Philodoria nigrella*, sp. nov. (Pl. XXV. fig. 25).

Antennae fuscous, white at the apex. Palpi white, the median joint streaked with fuscous externally, the terminal joint fuscous beneath. Head fuscous; face yellowish white. Thorax blackish. Forewings black, with a slight brownish gloss, a white spot at the extreme base below the middle and three short, outwardly oblique, white dorsal streaks, one near the base reaching to the fold, the second before the middle, crossing the fold, the third, shorter, at about the end of the fold; a little beyond the third dorsal is an oblique, narrow, spatulate leaden grey costal streak, which is succeeded by three white streaks in the costal cilia before the apex; at the apex is a black spot, separated beyond it by leaden grey and below it by chestnut-brown, from a black curved line around the base of the leaden grey cilia which blend with tawny fuscous about the tornus. Exp. al. 9 mm. Hindwings blackish; cilia tawny fuscous. Abdomen blackish, white beneath. Legs blackish, whitish beneath; hind tarsi spotted with whitish.

Type ♂ (28604) Mus. Wlsm.

HAB. HAWAII: Mt. Kilauea, VII. 1895; Hilo, 2000 ft., XII. 1895. Two specimens.

**55.** GRACILARIA, Hw.

Type *Tinea syringella*, F. (Crt. 1833).

†GRACILLARIA, Hw., Lp. Br. 527 (1828). ‡GRACILARIA, Z., Is. 1839, 288—9; Meyr., HB. Br. Lp. 749—50, fig. (1895); Stgr.-Rbl., Cat. Lp. Pal. II. 206, No. 420 (1901), etc.

**428.** (1) *Gracilaria marginestrigata*, sp. nov. (Pl. XXV. fig. 26).

Antennae fawn colour, faintly annulate with whitish. Palpi white, a dark spot at the end of the median joint and another before the apex of the terminal joint beneath. Head and Thorax fawn colour. Forewings fawn colour, with three costal and three dorsal oblique white streaks, narrowly black-margined; the first and second costal are small, nearly meeting the extremities of the larger dorsal streaks below them, which arise in each instance nearer to the base; the third costal, very slender, commencing above and extending beyond the apex of the triangular, somewhat curved, dorsal streak below it; at the apex within this curved line is a shining, steel-grey ocellus containing a patch of black scales; from the third dorsal streak to the apex is an elongate streak of shining, blue-black scales, with three short inverted costal streaks running through the cilia; cilia shining, blue-grey, with a slender black line running through them near their base which is curved and reduplicated around the apex, bronzy grey at the tornus. Exp. al. 6—7 mm. Hindwings and cilia bronzy grey. Abdomen leaden grey. Legs greyish, with white spots at the extremities of the tibiae and tarsi.

Type ♀ (25992); ♂ (25991) *Oahu*, Mus. Wlsm.

HAB. KAUAI: Makaweli, sea-level, larva mining various plants (2) excl. v. 1895; Mts., 3000—4000 ft., (2) vi. 1894.—OAHU: Waianae Mts., 1400 ft., on the leaves of a berry-bearing plant called "Kikania" (11) iv. 1892.—MOLOKAI: sea-level, (1) v. 1893; above 3000 ft., (1) 5. vi. 1893. Seventeen specimens.

The larva makes a slender tortuous mine, in which the frass is disposed in a continuous thread along the middle, in the upper side of leaves of .....(?)..... This mine commences sometimes at the mid-rib, sometimes at the outer edge of the leaf and terminates in an ovate blotch equal to about one-fifth of the width of the leaf itself in such specimens as I have before me (27968—70). Its habits appear to be most similar to those of *coffeifoliella*, Ntnr., and *latifoliella*, Mill. & Rgt. Mr. Perkins who bred this species in Kauai made the following note "bred from blotch, or mine and blotch combined, on various plants, v. 1895. Pupa butterfly-like, living in web on leaves." He also found it (apparently the imago) "on the leaves of a berry-bearing plant called 'Kikania'" in Oahu. There is obviously some error of observation in Mr. Perkins' notes, the larvae of some other Tineid must have been collected inadvertently with those of *G. marginestrigata*.

429. (2) *Gracilaria epibathra*, sp. nov. (Pl. XXV. fig. 27).

Antennae brownish. Palpi white, a small spot on the outer side of the median joint at its apex. Head shining, dirty whitish, a few brownish scales posteriorly. Thorax olive-brown. Forewings olive-brown, with three outwardly oblique broad pearly white dorsal streaks; the first near the base, somewhat rounded at its apex; the second at the middle, attenuate; the third near the tornus, quadrate; above the latter is an outwardly oblique slender white costal streak, followed by two smaller white streaks in the costal cilia before the apex; at the end of the oblique costal streak is a small patch of shining, blue scales, narrowly surrounded by pale ochreous; with a black spot at the apex, followed by shining blue at the base of the cilia; through these runs a curved metallic blue line, the space between which and an outer curved brownish line being whitish, tornal cilia smoky brownish. Exp. al. 7 mm. Hindwings brownish, with slightly paler cilia. Abdomen dark brown. Legs brownish, with whitish tarsal spots.

Type ♂ (26056) Mus. Wlsm.

HAB. MOLOKAI: 12. vi. 1893. Unique.



## 56. BEDELLIA, Stn.

Type *Lyonetia somnulentella*, Z. (= *orpheella*, Stn. 1849).

BEDELLIA, Stn., Syst. Cat. Br. Tin. & Pter. 23 (1849): Ins. Br. Lp. Tin. 225, 226, No. 1, Pl. VII. 2<sup>a-c</sup> (1854); Clem., Pr. Ac. Nat. Sc. Phil. XII. 8 (1860); Meyr., Pr. Lin. Soc. NSW. v. 169—70 (1880): HB. Br. Lp. 709, 758, No. 14 (1895); Stgr. & Rbl., Cat. Lp. Pal. II. 210, No. 423 (1901); Dyar, Bull. U.S. Nat. Mus. 52. 557 (1902).

430. (1) *Bedellia somnulentella*, Z. (Pl. XXV. fig. 28).

[= *convolvuliella*, Mn., *LN.*<sup>3</sup> († *cousolvuliella*, HS.)]; = *orpheella*, Stn.<sup>5</sup>; = *staintoniella*, Clem.<sup>18</sup>

[*Gracilaria convolvuliella*, Mn., Verz. Microlep. p. (= 7) (184...) *LN.*]<sup>1</sup>. *Lyonetia somnulentella*, Z., Is. 1847, 894—5, No. 432<sup>2</sup>: Linn. Ent. III. 264, *Ann.* (1848)<sup>3</sup>. *Bedellia orpheella*, Stn., Syst. Cat. Br. Tin. & Pter. 23, No. 1 (1849)<sup>4</sup>. *Bedellia somnulentella*, Stn., Sppl. Cat. Br. Tin. & Pter. 25 (1851)<sup>5</sup>; Dgl., Tr. Ent. Soc. Lond. (n. s.), II. 207—9, Pl. XVII. 1, 1, 1<sup>a-c</sup> (1853—4)<sup>6</sup>; Stn., Ins. Br. Lp. Tin. 226—7, Pl. VII. 2<sup>a-c</sup>, IX. 21, X. 20, 20<sup>a</sup> (1854)<sup>7</sup>; HS., SB. Schm. Eur. v. Pl. 104, 819 (1854): v. 336, No. 1055 (1856)<sup>8</sup>; vi. Syst. Verz. 68, No. 1055, Alph. Verz. v. 42 (1856)<sup>9</sup>; Stn., Ent. Ann. 1855, 55 [= (2 edn.) 77] (1855)<sup>10</sup>: 1856, 56<sup>11</sup>. *Bedellia cousolvuliella*, HS., SB. Schm. Eur. vi. p. viii, Pl. XIV. 26—9 (1856)<sup>12</sup>. *Bedellia somnulentella*, Frey, Tin. Pter. Schweiz. 263 (1856)<sup>13</sup>; Stn., Man. Br. B. & M. II. 395 (1859)<sup>14</sup>: Ann. & Mag. NH. (3. s.) III. 214 (1859)<sup>15</sup>. *Gracilaria convolvulella*, Fologne, Ann. Soc. Ent. Belge IV. 86—7 (1860)<sup>16</sup>. *Bedellia* (?) *staintoniella*, Clem., Pr. Ac. Nat. Sc. Phil. XII. 8—9 (1860)<sup>17</sup>; Stn., Pr. Ac. Nat. Sc. Phil. XII. 434 (1860)<sup>18</sup>. *Bedellia somnulentella*, Clem., Tr. Ent. Soc. Phil. I. 147—9 (1862)<sup>19</sup>; de Graaf, Tijd. v. Ent. XI. 66 (1868)<sup>20</sup>; Stn., Tin. S. Eur. 14, 213—4, 226 (1869)<sup>21</sup>; Z., Tijd. v. Ent. XIII. 260—1 (1870)<sup>22</sup>; Stgr.-Wk., Cat. Lp. Eur. 328, No. 2823 (1871)<sup>23</sup>; Tschnbgr., Stett. Ent. Ztg. XXXII. 174—5 (1871)<sup>24</sup>. *Bedellia staintoniella*, Clem. & Stn., Tin. N. Am. 12, 39, 95—6 (1872)<sup>25</sup>. *Bedellia somnulentella*, Clem. & Stn., Tin. N. Am. 189—91 (1872)<sup>26</sup>; Chamb., Cin. Qr. Jr. Sc. II. 297 (1875)<sup>27</sup>; Mill., Cat. Lp. Alp. Mar. 365—6 (1875)<sup>28</sup>; Hein-Wk., Schm. Deutsch. Tin. 697—8, No. 1117 (1876)<sup>29</sup>; Chamb., Bull. U.S. GG. Surv. III. 133—4, 141 (1877)<sup>30</sup>: IV. 116—7, 131 (1878)<sup>31</sup>; MP. & FT., Nat. Sic. VIII. 190 (1889)<sup>32</sup>; Hrtm., MT. Münch. Ent. Ver. IV. 54, No. 2823 (1880)<sup>33</sup>; Meyr., Pr. Lin. Soc. NSW. v. 170 (1880)<sup>34</sup>; Snell., Vlind. Ned. Microlep. 895—6, Pl. VII. 216 (1882)<sup>35</sup>; Hgn. & Frey, Pap. IV. 154 (1884)<sup>36</sup>; Meyr., Tr. NZ. Inst. XXI. 164—5, No. 15 (1888)<sup>37</sup>; H. Edw., Bull. U.S. Nat. Mus. 35, 120 (1889)<sup>38</sup>; Meyr., Pr. Lin. Soc. NSW. (2. s.) VII. 600, No. 182 (1893)<sup>39</sup>; Wlsm., Tr. Ent. Soc. Lond. 1894, 537, No. 24, 542 (1894)<sup>40</sup>; Meyr., HB. Br. Lp. 758 (1895)<sup>41</sup>; Rbl., Ann. KK. Hofmus. XI. 137, 147, No. 213 (1896)<sup>42</sup>; Busck, Pr. U.S. Nat. Mus. XXIII. 243—4 (1900)<sup>43</sup>; Stgr.-Rbl., Cat. Lp. Pal. II. 210, No. 4107 (1901)<sup>44</sup>; Dyar, Bull. U.S. Nat. Mus. 52. 557, No. 6337 (1902)<sup>45</sup>.

Types ♂ ♀—*somnulentella*, Z., ♂ Mus. Wlsm.; *orpheella*, Stn. (? Mus. Br.); *staintoniella*, Clem. (No. 54), Mus. Am. Ent. Soc. Phil.

HAB. EUROPE<sup>1-14, 16, 20-4, 28-30, 32-4, 37-8, 41-2, 44-5</sup>; S.E. RUSSIA<sup>22, 24, 44</sup>; AUSTRIA<sup>3, 7, 13, 22, 44</sup>; ITALY<sup>23, 44</sup>; SICILY<sup>2, 3, 7, 13, 21-2, 32</sup>; FRANCE<sup>21, 23, 28, 44</sup>; SWITZERLAND<sup>13, 23</sup>; GERMANY<sup>13, 22, 23</sup>; HOLLAND<sup>20</sup>; BELGIUM<sup>16, 23</sup>; ENGLAND<sup>4, 6-7, 13-14, 23, 41</sup>. MADEIRAS<sup>15, 40, 42, 44</sup>. CANARIES<sup>42, 44</sup>. UNITED STATES<sup>17-19, 24-7, 30-1, 34, 36-39, 41-5</sup>; KENTUCKY<sup>36</sup>; ILLINOIS<sup>25</sup>; TEXAS<sup>25</sup>; COLORADO<sup>27, 30</sup>. HAWAIIA. HAWAII: Kona, 4000 ft., VIII. 1892 (Perkins). AUSTRALIA<sup>34, 37, 39, 41</sup>; QUEENSLAND<sup>39</sup>; N. S. WALES<sup>34, 39</sup>; VICTORIA<sup>39</sup>; S. AUSTRALIA<sup>39</sup>; W. AUSTRALIA<sup>39</sup>. N. ZEALAND<sup>37, 39, 41</sup>.

LARVA. Mining leaves *Convolvulus* sp.<sup>34, 37-8, 41</sup>; *althaeoides*<sup>21, 28</sup>; *arvensis*<sup>6, 8, 11, 13, 16, 29, 33, 36</sup>; *cantabrica*<sup>21</sup>; *mauretanica*<sup>28</sup>; *sepium*<sup>6, 20, 22, 29, 33</sup>; *Ipomoea* sp.<sup>27, 30-1, 34, 36, 38, 41</sup>; *purpurea*<sup>19, 22, 24-6</sup>; *I. (Pharbitis)* sp.<sup>31</sup>, III<sup>21</sup>, VII<sup>33, 35, 41</sup>, VIII<sup>6-7, 13, 20, 29, 33, 35, 41</sup>, IX<sup>6-7, 13, 16, 20, 29, 35, 41</sup>, X<sup>19, 26</sup>.

IMAGO. I<sup>41</sup>, II<sup>26, 41</sup>, III<sup>28, 41</sup>, IV<sup>3, 3, 21-2, 41-2</sup>, V<sup>2-3, 21-2, 41</sup>, VI<sup>2-3, 21-2</sup>, VII<sup>22</sup>, VIII<sup>7, 13, 20, 29, 33, 35, 39, 41</sup>, IX<sup>4, 13, 16, 20, 22, 33, 35, 39</sup>, X<sup>7, 19, 22, 26, 29, 33, 39, 41</sup>, XI<sup>19, 22, 26, 39, 41</sup>, XII<sup>41</sup>, *hib.*<sup>35</sup>

Two large specimens which are certainly not *minor*, Busck, I name with some doubt *somnulentella*, Z. They were taken at Kona, 4000 ft., VIII. 1892 (25465; 25591, Mus. Wlsm.), and are slightly greyer than the ordinary European form, but appear to come within its range of variation.

#### 431. (2) *Bedellia minor*, Busck.

*Bedellia minor*, Busck, Pr. US. Nat. Mus. XXIII. 243—4 (1900)<sup>1</sup>; Dyar, Bull. US. Nat. Mus. 52. 557, No. 6338 (1902)<sup>2</sup>.

Antennae white, annulate with brownish grey. Palpi hoary whitish. Head pale fawn, varying to hoary whitish. Thorax fawn-brownish. Forewings pale fawn-brownish, densely sprinkled with darker fawn-brown, or greyish brown, scales; cilia pale fawn-brownish, or fawn-grey, sprinkled about the apex and along the base with darker fawn-brown, or brownish grey. Exp. al. 6—7 mm. Hindwings very pale grey; cilia pale brownish grey. Abdomen greyish, yellowish beneath speckled with blackish; ♂ with genital appendages strongly developed, and with long lateral hairs. Legs brownish grey, tarsi with pale annulations.

Type (No. 4954) US. Nat. Mus. [Caenotype ♂ (25974) Mus. Wlsm.]

HAB. UNITED STATES. FLORIDA<sup>1-2</sup>: Palm Beach<sup>1</sup>. HAWAIIA. OAHU: Waianae Mts., (19) IV. 1892.—MOLOKAI: sea level, (2) V. 1893.—HAWAII: Kona, 4000 ft., (3) 13. VIII. 1892. Twenty-four specimens.

LARVA mining *Ipomoea*<sup>1</sup>. Bred in Oahu from larvae mining *Convolvulus* leaves. Larva whitish. Pupa on leaves in web. Common (Perkins).

These specimens bear the same relation to the forms of *somnulentella* as is indicated in Busck's description of *minor*, and Mr. Busck agrees that they are correctly determined. Its smaller size enables it to be readily distinguished.

**432.** (3) *Bedellia struthionella*, sp. nov.

Antennae hoary whitish, distinctly annulate with fuscous. Palpi very short; hoary whitish, each joint annulate with fuscous. Head rough; hoary. Thorax hoary. Forewings hoary whitish, minutely sprinkled with fuscous scales, especially visible in a short basal streak below the middle, an oblique cloudy shade extending outward from the middle of the fold and overspreading the outer half of the costa to the apex, and in a rounded cloud-spot at the end of the cell; a short chestnut-brown streak at the middle of the base is dilated outward to about one-fourth, and a chestnut-brown patch lies on the middle of the dorsum, a slight sprinkling of the same colour passing through the oblique fuscous shade above it; cilia brownish cinereous, minutely sprinkled with fuscous about the apex. Exp. al. 7—8 mm. Hindwings greyish; cilia brownish cinereous. Abdomen greyish fuscous above, hoary beneath. Legs hoary, sprinkled with fuscous, the tarsi with four fuscous annulations.

Type ♂ (25558) *Hawaii*, Mus. Wlsm.

HAB. OAHU: Waianae Mts., (3) IV. 1892.—HAWAII: Kona, 4000—5000 ft., (4) 4—17. VII. 1892, (4) 9. IX. 1892. Eleven specimens.

**433.** (4) *Bedellia orchilella*, sp. nov.

Antennae brownish fuscous, with whitish annulations. Palpi, Head and Thorax greyish fuscous; face paler. Forewings greyish fuscous, with some pale cinereous speckling throughout; the only indication of markings is in the absence of the pale speckling at the base of the fold, in a slight spot on the outer half of the fold, and in a short dark streak on the dorsum, but these markings are very obscure; cilia pale greyish fuscous. Exp. al. 7 mm. Hindwings dark grey; cilia greyish fuscous. Legs greyish fuscous, with whitish tarsal speckling.

Type ♂ (25930) *Oahu*, Mus. Wlsm.

HAB. KAUAI: Kaholuamano, 4000 ft., (1) IV. 1895.—OAHU: Waianae Mts., (2) IV. 1892.—HAWAII: Kona, 4000 ft., (1) 8. IX. 1892; Olaa, (1) IX. 1896. Five specimens.

These specimens all represent a form much darker and more inclined to be unicolorous than *struthionella*, and are of an entirely different tint than *minor*, Busck, showing no trace of the fawn-brown which appears only in that species.

## 57. SETOMORPHA, Z.

Type *Setomorpha rutella*, Z.

SETOMORPHA, Z., Hndl. Kngl. Svensk. Vet. Ak. 1852, 93—4; Btl., Ent. Mo. Mag. XIX. 107 (1882); Wlsm., Tr. Ent. Soc. Lond. 1891, 81—2, Pl. VII. 73; Stgr.-Rbl., Cat. Lp. Pal. II. 233 (1901); Dyar, Bull. US. Nat. Mus. 52. 575 (1902); Dietz, Tr. Am. Ent. Soc. XXXI. 14—15 ♀ (♂=SEMIOTA, Dietz) 18. Pl. VI. 4 (1905); Busck, Pr. US. Nat. Mus. XXX. 734—5, figs. 9—10 (1906).

Butler [Ann. & Mag. NH. (5. s.) VII. 401 (1881)] proposed *Chrestotes* as a neonym in lieu of §*Safra*, Wkr. (1864) [homonymous with *Safra*, Wkr. (1863) *Lep.*], but §*Chrestotes*, Btl., is also invalid being homonymous with *Chrestotes*, Scudder (1868) *Neurop.*, while §*Safra*, Wkr., is synonymous with *Lindera*, Blanch. (1852), the type of both being *Lindera tessellatella*, Blanch. (= *Safra bogotatella*, Wkr.). Butler also (l. c.) described a new species as *Chrestotes dryas*, this however is not isotypical with *Lindera tessellatella*, Blanch., and must be referred to *Setomorpha*, Z., as also must *Semiota*, Dietz, founded on the ♂ of this genus (vide Busck l.c.).

434. (1) *Setomorpha dryas*, sp. nov.

*Chrestotes dryas*, Btl., Ann. & Mag. NH. (5. s.) VII. 401, No. 39 (1881)<sup>1</sup>.

Antennae pale fawn-brown. Palpi, Head and Thorax pale fawn-brown, sprinkled with brownish fuscous. Forewings pale fawn-brown, profusely sprinkled with brownish fuscous scales, which form numerous spots tending to run in lines, one costal, one subcostal, one discal, one plical (more or less confluent, especially on the outer half of the wing) and one subdorsal below the fold; cilia pale fawn-brown, much shaded with fuscous. Exp. al. 11—14 mm. Hindwings rather shining, brownish grey; cilia paler. Abdomen brownish grey. Legs brownish grey, tarsi whitish, banded with blackish.

Type ♀ (70: 81. 7) *Oahu*, Mus. Br.

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>.—HAWAII: Kaawaloa (Kona), 1500 ft., VI. 1872 (Perkins). One specimen.

Closely allied to *Setomorpha rupicella*, Z. (West Indies and Brazil) and *discipunctella*, Rbl. (Canaries); forewings with veins 7 and 8 stalked out of 9; hindwings with 5 and 6 stalked.

## 58. ACROLEPIA, Crt.

Type *Acrolepia autumnitella*, Crt. (Crt. 1838).

ACROLEPIA, Crt., Br. Ent. xv. expl. Pl. 679 (1838); Stn., Meyr., Stgr.-Rbl., Dyar, etc.

Type *autumnitella*, Crt. [=§*pygmaeana*, Hw., auct (nec Hb.)].

**435.** (1) *Acrolepia aureonigrella*, sp. nov.

Antennae whitish, very distinctly annulate with black. Palpi fuscous, with two whitish annulations on the outer half of the median joint, and two on the basal half of the terminal joint, of which the tip is also whitish. Head somewhat roughly clothed above with mixed greyish fuscous and greyish ochreous hair-scales. Thorax strongly tufted posteriorly; fuscous, with a strong sprinkling of golden yellowish scales. Forewings blackish, with a strong admixture of golden yellow scaling; a slightly curved greenish grey transverse fascia, at one-fourth from the base, is outlined and streaked with blackish; a second fascia before the middle, also bent outward on the cell, has its centre greenish grey margined on either side with yellowish (of a paler tint than the more golden sprinkling which occurs between the fasciae) this is also narrowly outlined with blackish; two other fasciae beyond the middle, more distinct on their upper than on their lower halves, are mixed yellow-ochreous and greenish grey, but these are ill-defined, giving merely a mottled aspect before the blackish terminal and apical area, which is also sprinkled with ochreous and grey scales; cilia tawny brownish fuscous, with whitish streaks running through them, and a narrow dark dividing line along their middle. Exp. al. 14 mm. Hindwings tawny brownish fuscous; cilia greyish at their tips. Abdomen dark tawny grey. Legs tawny grey, with whitish annulations at the tarsal joints.

Type ♂ (26069) Mus. Wlsm.

HAB. MOLOKAI: above 3000 ft., 26. VI. 1893. Unique.

**59.** MONOPIS, Hb.

= *BLABOPHANES*, Z.

Type *Tinea rusticella*, Hb. (Hb. 1826).

MONOPIS, Hb., Verz. Schm. 401 (1826); Meyr., Stgr.-Rbl., Dyar.

= *TINEA*, L.—(A) *BLABOPHANES*, Z., Lin. Ent. VI. 100 (1852).

**436.** (1) *Monopis monachella*, Hb.

[? = *mediella*, F.<sup>8</sup>]; = *longella*, Wkr.<sup>6</sup>

[? *Alucita mediella*, F., Ent. Syst. III. (2) 337, No. 26 (1798)<sup>1</sup>. *Tinea monachella*, Hb., Samml. Eur. Schm. VIII. Pl. XXI. (c. 1880)<sup>2</sup>. *Tinea longella*, Wkr., Cat. Lp. Ins. BM. XXVIII. 479 (1863)<sup>3</sup>. *Blabophanes longella*, Btl., Ann. & Mag. NH. (5. s.) VII. 396—7, No. 29 (1881)<sup>4</sup>. *Blabophanes monachella*, Meyr., Ent. Mo. Mag. XX. 36 (1883)<sup>5</sup>; Tr. Ent. Soc. Lond. 1894, 27<sup>6</sup>. *Monopis monachella*, Meyr., HB. Br. Lp. 785 (1895)<sup>7</sup>; Wlsm., Tr. Ent. Soc. Lond. 1897, 63—5<sup>8</sup>; Stgr.-Rbl.; Cat. Lp. Pal. II. 236, No. 4536 (1901)<sup>9</sup>.

LARVA among rubbish ; in birds' nests ; in skins.

HAB. EUROPE. ASIA. INDIA ; BURMAH ; CEYLON. W. & S. AFRICA. HAWAIIA<sup>4-8</sup>. OAHU: Honolulu (Blackburn)<sup>4</sup>.—LANAI: 2000 ft., XII. 1893, II. 1894 (Perkins).—HAWAII: Kona, 3000 ft., VI. 1892 (Perkins). Three specimens.

For full synonymy vide Wlsm.<sup>8</sup> The Hawaiian specimens belong to the variety with the white triangle clouded on the costa which was described by Walker as *longella*.

**437. (2) *Monopis crocicapitella*, Clms.**

n. syn. = *hyalinella*, Stgr ; = (*lombardica*, Hrng. ; = *heringi*, Rdsn.<sup>9</sup>) ; = \**ferruginella*, Wlsm. (nec Hb.)<sup>16</sup>.

*Tinea crocicapitella*, Clms., Pr. Ac. Nat. Sc. Phil. xi. 257, 258 (1859)<sup>1</sup> : Clms.-Stn., Tin. N. Am. pp. viii, 49, 51 (1872)<sup>2</sup>. *Tinea hyalinella*, Stgr., Hor. Soc. Ent. Ross. vii. 229 (1870)<sup>3</sup>. *Blabophanes hyalinella*, Stgr.-Wk., Cat. Lp. Eur. 269, No. 1371 (1871)<sup>4</sup>. *Tinea crocicapitella*, Chmb., Bull. US. GG. Surv. iv. 163 (1878)<sup>5</sup>. *Blabophanes* \**ferruginella*, Wlsm., Tr. Am. Ent. Soc. x. 170 (1882)<sup>6</sup>. *Blabophanes lombardica*, Hrng., Stett. Ent. Ztg. L. 295—9 (1889)<sup>7</sup> ; Rbl., Verh. ZB. Ges. Wien. Abh. xxxix. (1889) 303 (1889)<sup>8</sup>. *Tinea* \**ferruginella*, Riley, Smith's List Bor. Am. 95, No. 5085 (1901)<sup>9</sup>. *Blabophanes heringi*, Rdsn., Ent. Mo. Mag. xxix. 14—15 (1893)<sup>10</sup>. *Blabophanes lombardica*, Snell., Tijd. v. Ent. xxxvii. 14—18, Pl. I. 4—6 (1894)<sup>11</sup>. *Blabophanes hyalinella*, Snell., Tijd. v. Ent. xxxvii. 16—17 (1894)<sup>12</sup>. *Monopis lombardica*, Stgr.-Rbl., Cat. Lp. Pal. ii. 236, No. 4534 (1901)<sup>13</sup>. *Monopis hyalinella*, Stgr.-Rbl., Cat. Lp. Pal. ii. 236, No. 4535 (1901)<sup>14</sup>. *Monopis* \**ferruginella*, Dyar, Bull. US. Nat. Mus. 52. 570, No. 6488 (1902)<sup>15</sup>. *Tinea crocicapitella*, Busck, Pr. Ent. Soc. Wash. v. 184—5 (1903)<sup>16</sup>. *Monopis crocicapitella*, Dietz, Tr. Am. Ent. Soc. xxxi. 31, 33—4 (1905)<sup>17</sup>.

Types ♂♀ :—*crocicapitella*, Clms., Mus. Ac. Nat. Sc. Phil. ; *hyalinella*, Stgr., ♂♀ (Mus. Stgr.) ; *lombardica*, Hrng., ♂♀ (Mus. Hrng.) ; *heringi*, Rdsn. (Mus. Rdsn.).

LARVA in textile stuffs<sup>7</sup>.

IMAGO. e III<sup>3</sup>, VI—VII<sup>10-11</sup>, VIII<sup>7, 8, 10-11</sup>, IX<sup>7, 11</sup>, X<sup>7, 8, 10-11</sup>, XI<sup>7, 11</sup>, XII<sup>11</sup>.

HAB. EUROPE: ENGLAND<sup>10-11, 14</sup> ; HOLLAND<sup>11, 14</sup> ; GERMANY<sup>10</sup> [?] ; AUSTRIA<sup>7-8, 12, 14</sup> ; N. ITALY (Lombardy)<sup>7, 12-13</sup> ; SPAIN<sup>3-4, 12, 14</sup> ; GREECE<sup>3-4, 12, 14</sup>. HAWAIIA. MOLOKAI: above 3000 ft., 30. v. 1893 ; ♂ and ♀ *in cop.* in the house, 26. vii. 1893.—LANAI: 2000 ft., XII. 1893.—HAWAII: Kona, 4000 ft., 27. vii., 12. viii., ix. 1892 (Perkins). UNITED STATES<sup>1-2, 5-6, 9, 15-17</sup>.

**438. (3) *Monopis obumbrata*, Butl.**

*Blabophanes obumbrata*, Btl., Ann. & Mag. NH. (5. s.) vii. 396, No. 31 (1881)<sup>1</sup>.

Antennae, Palpi, Head and Thorax dark umber-brown. Forewings dark umber-brown, sprinkled with a few brownish ochreous scales ; a spot at the end of the cell is surrounded by a pale patch of brownish ochreous, by which another spot before and

below it on the fold is also indicated; the apical portion of the wing and cilia sprinkled with ochreous, the latter with a darker shade along their basal half. Exp. al. 13—16 mm. Hindwings rather shining, bronzy brownish; cilia brownish grey. Abdomen and Legs dirty brownish.

Type ♀ (71: 81. 7) Mus. Br.

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>. Mr Perkins did not meet with this species.

The forewings have a naked depression in the disc, but veins 3 and 4 are separate, 7 and 8 stalked.

## 60. *TINEA*, L.

Type *Phalaena Tinea pellionella*, L. (F. 1775).

PHALAENA TINEA, L., Syst. Nat. (ed. x.) 496 (1758); Poda, Ins. Mus. Graec. 94 (1761). TINEA, F., Syst. Ent. 655—67 (1775); Lamarck, Syst. An. sans Vert. 288 (1801); Wlsm. & Drnt., Ent. Mo. Mag. XXXIII. 40—1 (1897); Stn., Meyr., Stgr.-Rbl., Dyar, Dietz, etc.

### 439. (1) *Tinea fuscipunctella*, Hw.

*Tinea fuscipunctella*, Hw., Lp. Br. 562, No. 4 (1828)<sup>1</sup>; Stgr.-Wk., Cat. Lp. Eur. 270, No. 1404 (1871)<sup>2</sup>; Chamb., Bull. US. GG. Surv. IV. 164 (1878)<sup>3</sup>; Wlsm., Tr. Ent. Soc. Lond. 1881, 242 (1881)<sup>4</sup>; Meyr., Pr. Lin. Soc. NSW. (2. s.) VII. 534—5, No. 76 (1893)<sup>5</sup>; HB. Br. Lp. 791 (1895)<sup>6</sup>; Stgr.-Rbl., Cat. Lp. Pal. II. 238, No. 4583 (1901)<sup>7</sup>; Dyar, Bull. US. Nat. Mus. 52. 571, No. 6503 (1902)<sup>8</sup>; Dietz, Tr. Am. Ent. Soc. XXXI. 44, 45, 47 (1905)<sup>9</sup>, etc.

HAB. EUROPE<sup>1-9</sup>. W. ASIA<sup>2, 6-7</sup>. AFRICA, N.<sup>6-7</sup>, W.<sup>4</sup>, S.<sup>4</sup>. N. AMERICA<sup>3, 5-6, 8-9</sup>: LABRADOR<sup>7, 9</sup>. AUSTRALIA<sup>5-6</sup>. NEW ZEALAND<sup>5-6</sup>. HAWAIIA. HAWAII: Kaawaloa (Kona), 1500 ft., VI. 1892; Olaa, VI. 1895. Two specimens.

*Tinea* sp.?

= *Blabophanes* \**rusticella*, Btl., Ann. & Mag. NH. (5. s.) VII. 396, No. 30 (1881)<sup>1</sup> [nec Hb.].

Type (110: 81. 7) Mus. Br.

HAB. OAHU: Honolulu (Blackburn)<sup>1</sup>.

This is not a *Monopis*, Hb. (= *Blabophanes*, Z.), but a *Tinea*, and may be *fuscipunctella*, Hw., which occurs in Hawaii. The specimen in the British Museum is in unrecognisable condition, and one from Blackburn (Wlsm. Det. 3633: Mus. Meyr.) is scarcely better, but appears to have longer antennae than *fuscipunctella*.

## 61. PARAPHASIS, gen. nov.

(παράφᾳσις = consolation.)

Type *Paraphasis perkinsi*, Wlsm.

Antennae three-fourths the length of the forewings; bipectinate 5—6, the pectinations remote from each other, biciliate. Head rough. Labial Palpi porrect, projecting more than the length of the head beyond it, somewhat roughly clothed, the terminal joint short, depressed. Maxillary palpi short. Haustellum well-developed. Ocelli (not apparent). Thorax [denuded]. Forewings with the costa slightly arched towards the base; apex slightly depressed, obtuse; termen oblique, dorsum nearly parallel with costa along the middle: neuration 12 veins, all separate; 7 to termen, 3 and 4 approximating towards base. Hindwings as broad as the forewings, apex obtuse, termen evenly rounded: neuration 8 veins; 3 and 4 connate; 5 bent over towards origin of 4; an internal vein between 5 and 6; 6 and 7 separate. Abdomen much constricted at base. Legs smooth.

This genus belongs to the group of *Dissoctena*, Stgr., *Melasina*, Bdv., and *Compsoctena*, Z., with all of which it agrees in having bipectinate antennae, but the persistence of palpi and haustellum is interesting. Its antennae most resemble those of *Dissoctena*, but the well-developed palpi at once distinguish it, as also the neuration of the hindwings. The most critical point of difference between this and allied genera is "3 and 4 connate" in the hindwings, the usual tendency being towards approximation of 4 and 5.

440. (1) *Paraphasis perkinsi*, sp. nov.

Antennae pale cinereous, the pectinations brownish fuscous. Palpi dark ferruginous. Head and Thorax fawn-brownish. Forewings dark fawn-brownish, mottled with dark ferruginous and dark steel-grey, tending to form alternate, outwardly convex, transverse lines, not distinctly defined, except a little beyond the end of the cell; an inverted dark ferruginous dorsal blotch obscures the outer end of the fold, and is diffused upward across the middle of the cell; cilia ochreous on their outer half, dark fawn-grey on their basal half. Exp. al. 14 mm. Hindwings and cilia dark brownish grey. Abdomen greyish fuscous. Legs brownish grey.

Type ♂ (27268) Mus. Wlsm.

HAB. KAUAI: Mts., 3000—4000 ft., VI. 1894. Unique.

At first sight this species would probably be regarded as an *Amphisa*, allied to *gerningana*, Schiff.



## SUPPLEMENTARY.

## PYRALIDINA.

LINEODES, Gn.

1. *Lineodes ochrea*, Wlsm. (ante pp. 469—70).

OAHU: NW. Koolau Range, v, vii. 1901.

## PTEROPHORINA.

PLATYPTILIA, Hb.

4. *Platyptilia fuscicornis*, Z. (ante pp. 472—4).

OAHU: Waialua, coast, v. 1901.

## ORNEODINA.

ORNEODES, Ltr.

10. *Orneodes objurgatella*, Wlsm. (ante pp. 477—8).

OAHU: "bred from seeds of forest trees," "native, in forest" (Perkins No. 11: 1901).

## TINEINA.

## GELECHIADAE.

PHTHORIMAEA, Meyr.

21. *Phthorimaea operculella*, Z. (ante pp. 483—5).

HAWAIIA. OAHU: NW. Koolau Range, vii. 1901 (Perkins). TAHITI: Papeite, 7—14. iv. 1903 (Valhalla-Nicoll).

## 7: 1. GELECHIA, Hb.

- 21: 1. *Gelechia gossypiella*, Sndrs.

*Depressaria gossypiella*, Sndrs., Tr. Ent. Soc. Lond. III. 284—5 (1844)<sup>1</sup>; Swinh.-Cotes, Cat. Moths Ind. 716, No. 4900 (1889)<sup>2</sup>; Cotes, Ind. Mus. Notes II. 163 (1893)<sup>3</sup>. *Gelechia gossypiella*, Meyr., Jr. Bombay NH. Soc. XVI. 592 (1905)<sup>4</sup>.

"Dark fuscous brown, the head and thorax somewhat lighter in colour. Anterior wings with an undefined round blackish spot on the disc a little above the centre, and a fascia of the same colour crossing the wings a little above the apex, which itself is

black. Under wings of a silvery grey, darker towards the hinder margin. Legs and tarsi black-brown, with the joints light. Length 4—10 inch. The larva in the dried state is about 4-10ths of an inch long, largest just behind the head, of a dull red colour, with the head dark brown."

"The following is an extract of the letter which accompanied the specimens.—'The inclosed is an insect which was very destructive to the American cotton which was sown here (Broach), on light alluvial soil. The egg is deposited in the germen at the time of flowering, and the larva feeds upon the cotton seed until the pod is about to burst, a little previous to which time it has opened a round hole in the side of the pod for air, and at which to make an exit at its own convenience, dropping on the ground, which it penetrates about an inch, and winds a thin web in which it remains during the aurelia state. Curious enough, the cotton on the black soil was not touched by it. The native cotton is sometimes affected by it'."

"In the foregoing extract from Dr. Barn's letter it is interesting to remark, that the cotton grown from American seed is attacked in preference to any other, and that the cotton plant when grown upon 'black soil' remains free from injury. The former fact may be accounted for by the American cotton being of a different species to that usually grown in India, and probably offers seeds which are more suitable to the development of the larva." Saunders<sup>1</sup>.

LARVA. In bolls *Gossypium* spp.<sup>1, 3</sup>.

HAB. INDIA. BOMBAY: Baruch (= Broach)<sup>1-3</sup>; Surat<sup>4</sup>.—OUDH: Cawnpore<sup>2</sup>, Cotton, VI. 1883.—PUNJAB: Lahore, "Cotton-boll moth, reared from caterpillars from Lahore" [Cotes; 6010—11 Mus. Wlsm. = Drnt. Det. 1176—7 (1894)]. JAPAN (Pryer; 70795 Mus. Wlsm.). HAWAIIA. OAHU: Honolulu, "Tineid of Cotton (introduced)," "Highly injurious to Cotton, Honolulu" (Perkins, No. 4: 1901).

The species varies in the amount of the dark suffusion on the forewings, in some specimens the costal area being almost destitute of dark shading. Exp. al. 18—21 mm. In the hindwings veins 3 and 4 are connate or stalked in both Indian and Hawaiian specimens.

Although originally described from Indian specimens it is by no means certain that *gossypiella* is truly an Indian species for Dr. Barn's notes, as published by Saunders<sup>1</sup>, indicate strongly that the insect was imported with American Cotton which it preferred to the Indian species of *Gossypium*. Swinhoe and Cotes<sup>2</sup> record *gossypiella* from Cawnpore with a "?"—this mark of doubt is misplaced, the specimen was correctly determined as *gossypiella*, Sndrs., the "?" had reference to its being wrongly described as a *Depressaria* by Saunders (Durrant and Meyrick have both referred *gossypiella* to *Gelechia*, Hb.).

No special information accompanied this Cawnpore specimen (labelled "Cotton, VI. 1883"), but in the accumulation of "Notes on insect pests from the Entomological

Section, Indian Museum," published by the late Lionel de Nicéville in Indian Museum Notes, Vol. v. No. 3 (1903), we find (p. 183) under *Earias fabia* that Egyptian Cotton was grown on the experimental farm at Cawnpore. It is therefore presumable that this specimen of *gossypiella* was associated with imported Egyptian Cotton. We also read (l.c. p. 183) that: "On 4th December 1893 the Director of Land Records and Agriculture, Punjab, Lahore, sent some pods [bolls] of Egyptian cotton, containing green and white insects tunnelling into the pods. A single moth was bred from these, but was unidentified." This bred specimen was regarded as probably a variety of *Earias fabia*, but it has been overlooked that *Gelechia gossypiella* was also bred from these Lahore Cotton bolls. Two specimens were sent to Merton (6010—11 Mus. Wlsm.) with the note "Cotton-boll moth reared from caterpillars from Lahore" (Cotes, i. l., 19. ii. 1894)—these were determined as *Gelechia gossypiella*, Sndrs. (Drnt. Det. 1176—7: 1894). It would therefore seem that both the Lahore and Cawnpore specimens were imported with Egyptian cotton. We have no information as to the probable origin of the Surat specimens recorded by Meyrick<sup>4</sup> and may therefore assume that their history is similar to that of the other Indian specimens. Mr Perkins notes the Hawaiian specimens as "Tineid of Cotton (introduced)"—unfortunately he gives no indication of the locality whence it came—and at present we have no evidence that the species occurs in America, but a single specimen from Japan (70795, Mus. Wlsm.) in very poor condition would seem to be *gossypiella*.

## STOEBERHINUS, Btl.

**22.** *Stoeberhinus testaceus*, Btl. (ante p. 486).

OAHU: Honolulu, Mts., vi. 1900; SE. Koolau Range, vii. 1900.

## THYROCOPA, Meyr.

**34.** *Thyrocopa argentea*, Btl. (ante p. 496).

OAHU: NW. Koolau Range, vii. 1901.

**46.** *Thyrocopa pallida*, Wlsm. (ante pp. 502—3).

OAHU: SE. Koolau Range, vii. 1900; Honolulu, "dead wood feeder."

**49.** *Thyrocopa usitata*, Btl. (ante p. 504).

OAHU: NW. and SE. Koolau Range, vii. 1901.

**50.** *Thyrocopa abusa*, Wlsm. (ante pp. 504—5).

OAHU: Honolulu, coast, i. 1901; SE. Koolau Range, vii. 1901.

## HYPONOMEUTIDAE.

## BATRACHEDRA, Stn.

- 56.** *Batrachedra syrraphella*, Wlsm. (ante p. 509).

OAHU : NW. Koolau Range, VII. 1901.

## HYPOSMOCOMA, Btl.

- 145.** *Hyposmocoma trossulella*, Wlsm. (ante pp. 554—5).

OAHU : NW. Koolau Range, VII. 1901.

- 147.** *Hyposmocoma nebulifera*, Wlsm. (ante pp. 555—6).

OAHU : SE. Koolau Range, VII. 1900 ; NW. Koolau Range, VII. 1901.

- 154.** *Hyposmocoma abjecta*, Btl. (ante p. 559).

OAHU : NW. Koolau Range, VII. 1901.

- 155.** *Hyposmocoma blackburnii*, Btl. (ante pp. 559—60).

OAHU : Honolulu, Mts., VII. 1900.

- 159<sup>b</sup>.** *Hyposmocoma lupella*, Wlsm. + *suffusella*, Wlsm. (ante p. 564).

OAHU : NW. Koolau Range, VII. 1901.

- 160.** *Hyposmocoma mediella*, Wlsm. (ante p. 565).

OAHU : NW. Koolau Range, VII. 1901.

- 228.** *Hyposmocoma argentea*, Wlsm. (ante p. 596).

OAHU : NW. Koolau Range, VII. 1901.

- 236.** *Hyposmocoma alliterata*, Wlsm. (ante p. 600).

OAHU : NW. Koolau Range, VII. 1901.

- 246.** *Hyposmocoma dorsella*, Wlsm. (ante p. 605).

OAHU : NW. Koolau Range, VII. 1901.

- 275.** *Hyposmocoma tarsimaculata*, Wlsm. (ante p. 618).

OAHU : NW. Koolau Range, VII. 1901.

- 293.** *Hyposmocoma nebulifera*, Wlsm. (ante p. 628).

OAHU: SE. Koolau Range, VII. 1900; NW. Koolau Range, VII. 1901.

- 306.** *Hyposmocoma radiatella*, Wlsm. (ante p. 634).

OAHU: SE. Koolau Range, VII. 1900.

EUPERISSUS, Btl.

- 318.** *Euperissus cristatus*, Btl. (ante pp. 643—4).

OAHU: NW. Koolau Range, VII. 1901.

PRAYS, Hb.

- 329.** *Prays fulvocanellus*, Wlsm. (ante p. 652).

OAHU: Honolulu, Mts., VI. 1900; NW. Koolau Range, VII. 1901.

CARPOSINIDAE.

HETEROCROSSA, Meyr.

- 339.** *Heterocrossa herbarum*, Wlsm. (ante p. 658).

OAHU: SE. Koolau Range, VII. 1900; NW. Koolau Range, VII. 1901.

- 343.** *Heterocrossa subumbrata*, Wlsm. (ante p. 660).

OAHU: NW. Koolau Range, VII. 1901.

- 352.** *Heterocrossa nigromaculata*, Wlsm. (ante p. 666).

OAHU: NW. Koolau Range, VII. 1901.

- 359.** *Heterocrossa pusilla*, Wlsm. (ante p. 670).

OAHU: NW. Koolau Range, VII. 1901.

TORTRICIDAE.

ECCOPTOCERA, Wlsm.

- 365.** *Eccoptocera foetorivorus*, Btl. (ante pp. 674—5).

OAHU: NW. Koolau Range, VII. 1901; Larva—*Metrosideros* "Ohia" (Koebele, No. 2079) Perkins, No. 5: 1901.

## CROCIDOSEMA, Z.

**366.** *Crocidosema plebeiana*, Z. (ante pp. 675—6).

OAHU: Waialua, coast, v. 1901; NW. Koolau Range, vii. 1901; Honolulu "probably introduced, common about Honolulu and in the Mts." (Perkins).

## GYPSONOMA, Meyr.

**367.** *Gypsonoma leprarum*, Wlsm. (ante p. 676).

OAHU: NW. Koolau Range, vii. 1901; Honolulu.

## ENARMONIA, Hb.

**378.** *Enarmonia walsinghami*, Btl. (ante pp. 684—5).

OAHU: NW. Koolau Range, vii. 1901.

## ARCHIPS, Hb.

**384.** *Archips postvittanus*, Wkr. (ante pp. 690—1).

HAWAIIA. OAHU: Waianae, Larva *Euphorbia* spp., excl. i. 1901; Honolulu, Larva *Citrus* spp., excl. i. 1901; Waialua, coast, v. 1901, 2000 ft., Larva *Acacia koa*, excl. ix. 1900; NW. Koolau Range, vii. 1901. "Tortrix (introduced) polyphagous, especially injurious to species of *Citrus*. Rather variable. Probably Australian as it is found in NEW CALEDONIA. Polyphagous and increasing enormously in the islands." (Perkins, No. 7: 1900).

**385.** *Archips longiplicatus*, Wlsm. (ante pp. 691—2).

OAHU: NW. Koolau Range, iv. 1901; N. Koolau Range, viii. 1901.

**385: 1.** *Archips capucinus*, Wlsm.

*Tortrix* (?) *capucina*, Wlsm., Fn. Hw. i. 701—2, No. 398, Pl. XI. 23 (1907)<sup>1</sup>.

HAB. OAHU: NW. Koolau Range (♂ ♀), vii. 1901.—MOLOKAI: 4000 ft., 23. ix. 1893<sup>1</sup>.—HAWAII: Kona, 3000 ft., vi. 1892<sup>1</sup>.

The reception of the ♂ renders it necessary to remove this species to the genus *Archips*.

## TORTRIX, L.

**398.** *Tortrix* (?) *capucina*, Wlsm. (ante pp. 701—2) = *Archips capucinus*, Wlsm. 385: 1.

## TINEIDAE.

## OPOGONA, Z.

416. *Opogona aurisquamosa*, Btl. (ante pp. 713—4).

OAHU: Honolulu, Mts., VI. 1900.

## EREUNETIS, Meyr.

417. *Ereunetis simulans*, Btl. (ante p. 715).

OAHU: NW. Koolau Range, v, VII. 1901; SE. Koolau Range, VII. 1900; N. Koolau Range, VIII. 1901. "Black and white wood-eating Tineid, introduced," "Black and white Tineid of dead bark, now in thousands in Oahu—introduced" (Perkins, No 10: 1901).

419. *Ereunetis minuscula*, Wlsm. (ante p. 716).

OAHU: "Tineid with upturned tip to wings. Bred from seeds of introduced *Acacia* etc. etc." (Perkins, No. 12: 1901).

## PHILODORIA, Wlsm.

425. *Philodoria splendida*, Wlsm. (ante pp. 719—20).

OAHU: NW. Koolau Range, VII. 1901.

## MONOPIS, Hb.

437. *Monopis crocicapitella*, Clms. (ante p. 728).

OAHU: NW. Koolau Range, VII. 1901.

## REMARKS.

After long and careful study of the *Microlepidoptera* of Hawaiiia it may be useful to make some general remarks upon such points as presented themselves during the progress of the work. Careful detailed analyses have been made to illustrate the geographical distribution of all the species and of some critical genera from which may be seen the proportions of those which may be regarded as autochthonous, or otherwise, as well as their interinsular relationship or representation. From these it has been attempted at least to conjecture the probable origin of the Hawaiian Fauna.

Until my own studies were approximately completed I had carefully avoided reading the prefaces to other papers already published upon different branches of the Entomology of these Islands, lest there should be any temptation to adopt conclusions arrived at by others rather than to form an independent opinion from the material in hand, but on comparing these prefaces with my own notes and analyses it is impossible

not to recognise that the observations made in any one paper are mainly applicable to all the others, and assuredly the *Microlepidoptera* suggest no exception to what appears to be the general impression as to the origin and present process of distribution of the species occurring in this group of islands.

It may be observed that many years ago Frederick Smith and de Saussure (as quoted by Perkins) regarded the Aculeate *Hymenoptera* as of American origin, but Perkins dismisses this suggestion, from his own experience, as probably founded upon the study of what were mainly artificially-introduced species.

In dealing with the *Coleoptera* Dr. Sharp mentions two genera of *Plegithmysides* as seeming to be nearest allied to the genera *Neoclytus* and *Euryscelis* which are found in North and Central America and in the Greater Antilles. We may be led to imply that he attributed an American origin to these genera, but I am unable to discover that he has indicated any leaning towards the adoption of a similar theory as concerning the majority of the Hawaiian *Coleoptera*.

It is most remarkable that whereas the *Gelechiadae* are very largely represented in the western regions of North America these are nearly absent from Hawaii, almost the only genera in this family being allied to *Thyrocopa*, Meyr., a group (*Xyloryctidae*) of distinctly Australian affinity. In fact the main indication of similarity throughout the *Microlepidoptera*, while pointing to a common origin, precludes the belief that such origin could have been either Asiatic or American. The survival of isolated remnants of an older fauna seems to be indicated, precisely such as might be expected to occur through the submersion of lower portions of some vast continent and the maintenance of its highest peaks in the form of oceanic islands. If the supposition of a lost "PACIFICA" may not be acceptable, as accounting for the prevalent similarity which I have mentioned, some other theory must be devised, possibly even less capable of support by the evidence of facts and at least equally beyond the possibility of precise proof.

One thing certainly strikes us very forcibly in regard to the close affinity of species and the extreme difficulty of finding reliable and persistent generic characters, viz. that the Hawaiian *Microlepidoptera* are in a condition of progressive, and at present imperfect, differentiation. For, whereas in all other continental collections we find an abundance of distinct and easily recognisable species and genera, intermixed with some few only difficult to identify, the Hawaiian *Microlepidoptera* are in the great majority of instances so closely allied, or so confusingly similar, as to present the utmost difficulty in any attempt at classification or description. Each prevalent form seems to possess representatives in the various islands, but these are scarcely ever absolutely inseparable *in series*, and possess in each case some distinctive peculiarity of colour, or markings, or secondary sexual characters, which seems to entitle them to recognition as at least geographical species. It is not uncommon to find in a long series of specimens, apparently similar at first sight, that a certain proportion of the males possess an expansible subcostal hair-pencil at the base of the hindwings which is wanting in others, and a minute



examination usually discloses persistent differences, however slight, which enable the species to be distinguished from each other in either sex. I was at first disposed to regard this sexual character as of generic value, but the idea was ultimately abandoned in view of the varying degree in which it was represented, and of the precise similarity, in all other structural details, of the very numerous specimens under observation. The same plasticity extends to other structural characters, such as the pecten on the basal joint of the antennae, the clothing of the tibiae, the comparative breadth of the fore and hindwings, and the relative length of the palpal joints; the neuration also is occasionally unstable (see remarks under the genus *Diplosara*, Meyr., pp. 646—7, etc.).

The absence of *Oecophoridae*, one species, *Ethmia colonella* (introduced), representing this family, is the most notable point in which the Hawaiian *Tineina* differ from those of Australia, for *Oecophoridae* are probably more abundantly represented there than any other family.

*Microlepidoptera* ought to prove very useful in determining the affinities of the Hawaiian fauna. Their extremely delicate nature, short lives, and restricted food-plants cause the majority of them to be very locally distributed, and thus less likely to be imported than other more enduring forms—some few exceptional instances are referred to.

The Microlepidopterous Fauna of Hawaii is almost exclusively autochthonous, having apparently been formed through the splitting-up of species by compulsory segregation. This would naturally occur under the hypothesis that these islands represent merely the tops of mountain ranges formerly belonging to one continent over which, before such isolation, these species had a wide range with no special cause for variation. The study of ethnology, and of the languages, habits, and superstitions of native races seems to support the theory of a common origin, and, given a Pacifican Fauna we should expect it to persist in isolated groups of islands extending from Hawaii to New Zealand, and, so far as one can judge, this appears to be the case.

The following extracts are from Ellis' *Polynesian Researches*, iv. (2nd edn. 1831.)

Discussing the question of the Pacific Islanders having "an Asiatic, and probably a Malayan, origin."—

"The natives of the eastern part of New Holland, and the intertropical islands within thirty degrees east, including New Caledonia, the New Hebrides, and the Figiis, appear to be one nation, and in all probability came originally from the Asiatic islands to the northward, as their skin is black, and their hair woolly or crisped, like the inhabitants of the mountainous parts of several of the Asiatic islands. But the inhabitants of all the islands to the east of the Figiis, including the Friendly Islands and New Zealand, though they have many characteristics in common with these, have a number essentially distinct.

The natives of Chatham Island and New Zealand, in the south; the Sandwich Islands, in the north; the Friendly Islands, in the west; and all the intermediate islands, as far as Easter Island, in the east, are one people. Their mythology, traditions, manners and customs, language, and physical appearance, in their main features, are, so far as we have had an opportunity of becoming acquainted with them, identically the same, yet differing in many respects from those of the islands to the westward of Tongatabu.

The dress of the Figiians, &c. is not the same as that of the natives of New Zealand, Tahiti, and the

other islands; they do not appear to wear the cloak, or the *tiputa*. In war, they throw long spears to a considerable distance, and use the bow and arrow, which the others only employ in their amusements.

The difference in their physical character is greater; the dark complexion, woolly hair, and slender make, indicate them to be a different people.

Various points of resemblance have been shewn between the aborigines of America and the natives of the eastern islands of the Pacific, in their modes of war, instruments, gymnastic games, rafts or canoes, treatment of their children, dressing their hair, feather head-dresses of the chiefs, girdles, and particularly the *tiputa* of the latter, which in shape and use, exactly resembles the *poncho* of the Peruvians.

These circumstances seem to favour the conjecture, that the inhabitants of the islands west of Tongatabu have an Asiatic origin entirely; but that the natives of the eastern islands may be a mixed race, who have emigrated from the American continent, and from the Asiatic islands; that the proximity of the Friendly and Figii islands may have given both a variety of words and usages in common, while the people to which the former belong have remained in many respects distinct.

The nation inhabiting the eastern part of the Pacific has spread itself over an immense tract of ocean, extending upwards of seventy degrees north and south from New Zealand and Chatham Island to the Sandwich group, and between sixty and seventy degrees east and west from Tongatabu to Easter Island. This last is not farther from the islands adjacent to the continent than some of these groups are from any other inhabited island. The Sandwich Islands are above twenty degrees from the Marquesas, and thirty-six from Tahiti, yet inhabited by the same race of people." (Ellis, l. c. 432—4.)

#### *The people of Hawaii.*

"They said they were informed by their fathers, that all the land had once been overflowed by the sea, except a small peak on the top of Mouna-Kea, where two human beings were preserved from the destruction that overtook the rest, but they said they had never before heard of a ship, or of Noah, having always been accustomed to call it the *kai a Kahinarii* (sea of Kahinarii)." (Ellis, l. c. 441—2.)

"The general opinions entertained by the natives themselves, relative to their origin, are, either that the first inhabitants were created on the islands, descended from the gods by whom they were first inhabited, or that they came from a country which they called Tahiti." (Ellis, l. c. 428.)

"In former times, when there was nothing but sea, an immense bird settled on the water, and laid an egg, which soon bursting, produced the island of Hawaii. Shortly after this, a man and woman, with a hog, a dog, and a pair of fowls, arrived in a canoe from the Society Islands, took up their abode on the eastern shores, and were the progenitors of the present inhabitants." (Ellis, l. c. 430.)

"Another account prevalent among the natives of Oahu, states, that a number of persons arrived in a canoe from Tahiti." (Ellis, l. c. 430.)

"*Tahiti* is the name of the principal island in the group, called by Captain Cook the Georgian Islands. It is the *Otaheite* of Cook; the *Taiti* of Bougainville; and the *Taheitee*, or *Tahitee*, of Forster. In the language of the Georgian and Society Islands, the word *tahiti* also signifies to pull up or take out of the ground, as herbs or trees are taken up with a view to transplantation, and to select or extract passages from a book or language, to be translated into another. Hence a book of scripture extracts is called, words, *tahitihea*." (Ellis, l. c. 431.)

*Tahiti* "seems equivalent to the English word *abroad*, as applied to parts beyond the sea." (Ellis, l. c. 431.)

#### *Society Islands.*

"Raiatea is not only the most important island of the Leeward group, from its central situation and its geographical extent, but on account of its identity, in tradition, with the origin of the people, and their preservation in the general deluge. It has been distinguished as the cradle of their mythology, the birth-place and residence of Oro, the region to which disembodied spirits resorted, the seat of their oracle, and the abode of those priests whose predictions for many generations regulated the expectations of the nation. It is also intimately connected with the most important matters in the traditional history and ancient religion of the people." (Ellis, l. c. II. 314—5.)

"In some of the ancient traditions of the Society Islands, Opoa, in Raiatea, the most celebrated place in the islands, the birth-place of Oro, and the spot where the human species were created, &c. is called *Hawaii*." (Ellis, l. c. iv. 431.)

"Opoa is the most remarkable place in Raiatea; of its earth, according to some of the traditions, the first pair were made by Tii, or Taaroa, and on its soil they fixed their abode. Here Oro held his court. It was called Hawaii; and as distant colonies are said to have proceeded from it, it was probably the place at which some of the inhabitants of the South Sea Islands arrived. It has also long been a place of celebrity, not only in Raiatea, but throughout the whole of the Society Islands. It was the hereditary land of the reigning family, and the usual residence of the king and his household." (Ellis, l. c. ii. 314—5.)

*Language and Customs.*

The same method of salutation (rubbing noses) practised by all the inhabitants of the Pacific, also in Madagascar, this custom is called "*Hogni*" (New Zealand); "*Hoi*" (Tahiti); "*Honi*" (Hawaii). (Ellis, l. c. 337.)

Mr. Perkins informs me that a very large proportion of the species dealt with in this paper were obtained by searching upon trunks of trees and among dead leaves under forest growth. As might be expected under such circumstances many of them were proved to be case-bearers, and without doubt this habit is characteristic, especially of such genera as are found rich in species. The most commonly known European case-bearing Tineina are those of the genus *Coleophora*, Hb., and it is at least a coincidence that in the perfect state these are also extremely difficult to distinguish from each other without some knowledge of their preliminary stages. Many attempts have been made to recognise characters of generic value among the numerous species of this genus, but *Coleophora*, as now generally accepted, presents a gradation of structure which not only fails to afford satisfactory lines for higher classification, but sometimes increases the difficulty of determining the limits of rightly accepted species. This applies specially to the more or less fugitive hair-scales at the base of the antennae, sometimes well-developed, sometimes weak, and often absent. If all the known species of Holarctic *Coleophorae* (many of them represented by a single specimen) were mixed together in a series of store-boxes it would not be more difficult to identify the species correctly, without any clue to their life-histories, than it has been to work through a correspondingly numerous collection of the genus *Hyposmocoma*, Btl., consisting of at least 170 species, and to determine the limits of special variation. Yet it will be obvious to anyone acquainted with the subject that a series of *Coleophorae* selected at random would almost certainly include several consistently distinct species.

If the above illustration may convey some idea of the interminable series of mutations by which the differentiation of species has progressed, a study of generic characters is almost equally confusing. The general notion derived from such study is that the process of branching from a common stem must have commenced before the evolution of some of our best-known and hitherto easily recognised families—e.g. Meyrick's diagnostic separation of the *Elachistidae* from the *Hyponomeutidae* (= *Plutellidae*, Meyr.) on the comparative breadth of the hindwings can no longer be maintained. The variation in these forms in Hawaii is evidently greater than any that occurs

among their congeners in Australia, although the Australian Fauna, from which Meyrick's experience has been largely derived, is supposed to be one of the oldest—the question arises, are we not dealing with a fauna derived from forms ancestral even to those which have been preserved in that region?

It would be easy to select many instances of what might be called either broad-winged *Elachistidae*, or narrow-winged *Hyponomeutidae* (connected by intermediate forms) from among the material with which I have dealt, and the conclusion is forced upon us that such radiation from a common stock as may be presumed to have occurred, dates from a period antecedent to the differentiation of these hitherto accepted families, and although elsewhere their connecting links seem to have disappeared, yet, so far as this limited fauna is concerned, they cannot be separated, and can therefore no longer be regarded as separable.

It may be interesting to observe the proportionate number of species represented in the Hawaiian Islands, according to our present acquaintance with what are known as the *Macrolepidoptera* and the *Microlepidoptera*.

Meyrick's list contains 292 species (including the *Rhopalocera*) and he has worked out all the families to the end of the *Pyrallidina*.

Of the *Pterophorina* and *Tineina*, which are now dealt with, I have distinguished 441 species, and although it is possible that some few of these forms may eventually be found to be varietal, rather than special, the actual proportions will almost certainly be readjusted by the future differentiation of others which are here regarded as varieties.

Thus the numerical relation borne by the micros to the macros is 441 to 292, while the endemic proportion is 420 to 261.

Mr. Perkins devoted a great deal of time to the *Macrolepidoptera*, and it was only when he failed to find species not previously met with that he gave special attention to the smaller forms. It is therefore reasonable to regard the above proportions as approximately representing the facts of the case. I have every reason to believe that if an equally extensive knowledge of the fauna of other portions of the world's surface could be acquired it would be found in the majority of cases that somewhat similar proportions would be maintained, and we look back with some surprise to Stainton's delight and astonishment when he first received Indian *Microlepidoptera* from Atkinson, so late as the year 1855, and still more to the statement of Curtis, at the same date (Pr. Ent. Soc. Lond. 1855, 93—4), that he doubted whether *Microlepidoptera* would be found so plentiful in tropical countries as Stainton anticipated on the strength of this consignment because during a late expedition in the South of Europe in company with Francis Walker, during which they sought especially for *Microlepidoptera*, the number of small moths among their 6000 captures was very few. Perhaps Walker shared Curtis' views before he became a too-prolific author of descriptions of exotic micros!

Before Mr. Perkins so laboriously and persistently dragged these Hawaiian *Tineina* from their obscurity 35 species only, as now admitted, had been described; 1 by

Walker, 29 by Butler, and 5 by Meyrick, the two latter authors working out Blackburn's collections. Mr. Meyrick also collected a few species in Oahu himself, in 1883, which by his courtesy are included in the present paper. I have also to thank him especially for having lent me all his material, including types of his own species and genera, and such exponents of Butler's species as Blackburn had numbered and retained for his own use.

It will be recognised by all practical workers that the examination of so large a collection has been no easy task. The specimens, although for the most part in good condition, were merely pinned on blocks of cork with a dated locality label beneath. On each block were insects of various sizes, thus every specimen had to be provisionally registered before they could be relaxed in groups selected according to size, and therefore according to the amount of moisture required, the provisional labels being of course rendered useless after damping, and serving only to preserve a reference to the details in MS. All were repinned and set. The amount of mere manual labour which this involved has been a severe tax upon the time and industry of my assistant Mr. Durrant, but that was after all only the lighter part of his work. He has also undertaken for me a detailed examination of structural characters, and the sorting-out of species and genera preparatory to final arrangement and description.

If anything could have damped the enthusiasm of a specialist devoted to his subject the genera *Hyposmocoma*, *Aphthonetus*, *Neelysia*, and *Heterocrossa* would assuredly have done so, but in verifying his work I have found scarcely any errors and these only such as were absolutely unavoidable in dealing with such a mass of material. He examined the neurulation and other minute structural characters of *every* specimen in the collection. Many which were almost absolutely similar in colour and markings were found to differ in more important respects, and the discovery of one difference invariably led to the recognition of others which had at first sight been overlooked. Generic separation, which at first seemed obvious, had frequently to be discarded as valueless, and the work had thus to be done three or four times over before a satisfactory conclusion could be reached. I cannot sufficiently commend, or acknowledge, the patience and perseverance with which he has relieved me of by far the greater part of this labour and made my task, if not actually easy, yet far less painfully exhausting than his own.

Whatever remarks are to be found in prefaces to other papers on Hawaiian entomology are in entire sympathy with the above-mentioned experiences as to variability and plasticity, and the consequent difficulties of precise differentiation and classification.

The analytical tables will be found to supply the evidence, which has led to the conclusions adopted above, and in nearly all cases a remarkable symmetry will be observed between these and similar tables which accompany the work of other entomologists—most noticeably perhaps with regard to the ratio of endemic and apodemic species, and to the proportionate numbers of each as represented in particular islands.

# TABLE OF DISTRIBUTION.

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
I. <i>PYRALIDINA</i> , pp. 469, 731							
I. PYRAUSTIDAE, pp. 469, 731							
LINEODES, Gn., pp. 469, 731							
1 <i>ochrea</i> , W., pp. 469, 731, Pl. X. 1 ...	1	1	...	...	...	1	
2 <i>subextincta</i> , W., p. 470, Pl. X. 2 ...	2	...	1	...	...	2	
II. <i>PTEROPHORINA</i> , pp. 471, 731							
TRICHOPTILUS, Wlsm., p. 471							
1 <i>oxydactylus</i> , Wkr., p. 471, Pl. X. 3 ...	...	2	2	...	1	...	(? United States), West Indies, Arabia, India, Ceylon, New Guinea, Queensland
PLATYPTILIA, Hb., pp. 472, 731							
1 <i>fuscicornis</i> , Z., pp. 472, 731, Pl. X. 4	3	3	3	1	2	...	Colombia
2 <i>brachymorpha</i> , Meyr., p. 474, Pl. X. 5	...	4	...	...	...	3	
3 <i>rhynchophora</i> , Meyr., p. 475, Pl. X. 6	4	5	4	...	3	4	
4 <i>insularis</i> , W., p. 475, Pl. X. 7 ...	...	6	5	...	...	...	
5 <i>littoralis</i> , Btl., p. 476, Pl. X. 8—9 ...	...	7	...	...	...	5	
III. <i>ORNEODINA</i> , pp. 477, 731							
ORNEODES, Ltr., pp. 477, 731							
1 <i>angustestriata</i> , W., p. 477, Pl. X. 10	5	...	...	...	...	...	
2 <i>objurgatella</i> , W., pp. 477, 731, Pl. X. 11	...	8	...	...	...	...	
IV. <i>TINEINA</i> , pp. 478, 731							
I. GELECHIADAE, pp. 478, 731							
ARISTOTELIA, Hb., p. 478							
1 <i>maculaticornis</i> , W., p. 478, Pl. XIII. 17	...	...	...	...	...	6	
2 <i>nigriciliella</i> , W., p. 479, Pl. XIII. 18	...	...	...	...	...	7	
3 <i>ichthyochroa</i> , W., p. 479, Pl. XIII. 19	...	...	6	...	...	...	
4 <i>epermeniella</i> , W., p. 480, Pl. XIII. 20	6	...	...	...	...	...	
5 <i>notata</i> , W., p. 480, Pl. XIII. 21 ...	...	...	7	...	...	...	
6 <i>lanaiensis</i> , W., p. 481, Pl. XIII. 22	...	...	...	2	...	...	
7 <i>elegantior</i> , W., p. 481, Pl. XIII. 23	...	9	...	...	...	...	
8 <i>mendax</i> , W., p. 481, Pl. XIII. 24 ...	7	...	...	...	...	...	
9 <i>arcuata</i> , W., p. 482, Pl. XIII. 25 ...	...	10	...	...	...	...	
MERIMNETRIA, W., p. 482							
1 <i>flaviterminella</i> , W., p. 482, Pl. XIII. 26	...	...	...	...	...	8	
PHTHORIMAEA, Meyr., pp. 483, 731							
1 <i>operculella</i> , Z., pp. 483, 731, Pl. XIII. 27	8	11	8	...	...	9	Spain, Algeria, Canaries, West Indies, United States, Aus- tralia, New Zealand, Tahiti
GELECHIA, Hb., p. 731							
1 <i>gossypiella</i> , Sndrs., p. 731 ...	...	12	...	...	...	...	India, Japan
STOEBERHINUS, Btl., pp. 485, 733							
1 <i>testaceus</i> , Btl., pp. 486, 733, Pl. XIII. 28	9	13	9	...	...	10	Marquesas
AUTOSTICHA, Meyr., p. 486							
1 <i>pelodes</i> , Meyr., p. 487, Pl. XIV. 1 ...	...	14	...	...	...	...	

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
HODEGIA, W., p. 488							
1 <i>apatela</i> , W., p. 488, Pl. XIV. 2 ...	...	...	...	...	4	...	
PTYCHOTHRIX, W., p. 489							
1 <i>vagans</i> , W., p. 489, Pl. XIV. 3 ...	10	...	...	...	...	...	
PSYCHRA, W., p. 489							
1 <i>phycidiformis</i> , W., p. 490, Pl. XIV. 4 ...	11	...	...	...	...	...	
2 <i>brevipalpis</i> , W., p. 490, Pl. XIV. 5 ...	12	...	...	...	...	...	
CATAMEMPISIS, W., p. 491							
1 <i>decipiens</i> , W., p. 491, Pl. XIV. 6 ...	...	15	...	...	...	11	
THYROCOPA, Meyr., pp. 492, 733							
1 <i>gigas</i> , Btl., p. 493, Pl. XIV. 7 ...	13	16	10	...	5	...	
2 <i>viduella</i> , W., p. 494, Pl. XIV. 8 ...	14	...	...	...	...	...	
3 <i>cinerella</i> , W., p. 494, Pl. XIV. 9 ...	15	...	...	...	...	...	
4 <i>megas</i> , W., p. 495, Pl. XIV. 10 ...	...	...	...	...	6	...	
5 <i>albonubila</i> , W., pp. 495, Pl. XIV. 11 ...	16	...	...	...	...	...	
6 <i>argentea</i> , Btl., pp. 496, 733, Pl. XIV. 12 ...	...	17	...	...	...	12	
7 <i>minor</i> , W., p. 496, Pl. XIV. 13 ...	...	...	11	...	...	...	
8 <i>indecora</i> , Btl., p. 497, Pl. XIV. ♂ 14, ♀ 15 ...	...	...	...	...	7	...	
9 <i>tessellatella</i> , W., p. 498, Pl. XIV. 16 ...	...	...	...	...	...	13	
10 <i>depressariella</i> , W., p. 498, Pl. XIV. 17 ...	17	...	...	...	...	...	
11 <i>nubifer</i> , W., p. 499, Pl. XIV. 18 ...	...	...	...	...	...	14	
12 <i>seminatella</i> , W., p. 499, Pl. XIV. 19 ...	18	...	...	...	...	...	
13 <i>pulverulenta</i> , W., p. 500, Pl. XIV. 20 ...	...	...	...	...	...	15	
14 <i>epicapna</i> , Meyr., p. 500, Pl. XIV. 21 ...	19	...	...	...	...	16	
15 <i>alterna</i> , W., p. 501, Pl. XIV. 22 ...	...	...	...	...	8	17	
16 <i>immutata</i> , W., p. 501, Pl. XIV. 23 ...	20	...	...	...	...	...	
17 <i>fraudentella</i> , W., p. 502, Pl. XIV. 24 ...	...	...	...	...	9	18	
18 <i>pallida</i> , W., pp. 502, 733, Pl. XIV. 25 ...	21	18	12	...	...	...	
19 <i>adumbrata</i> , W., p. 503, Pl. XIV. 26 ...	...	...	...	...	...	19	
20 <i>inermis</i> , W., p. 503, Pl. XIV. 27 ...	...	...	...	...	...	20	
21 <i>usitata</i> , Btl., pp. 504, 733, Pl. XIV. 28 ...	22	19	...	...	...	21	
22 <i>abusa</i> , W., pp. 504, 733, Pl. XV. 1 ...	...	20	...	...	...	...	
23 <i>subchenea</i> , W., p. 505, Pl. XV. 2 ...	...	...	13	...	...	...	
24 <i>leonina</i> , W., p. 505, Pl. XV. 3 ...	...	...	...	3	...	...	
25 <i>geminipuncta</i> , W., p. 506, Pl. XV. 4 ...	...	...	14	...	...	...	
26 <i>mediomaculata</i> , W., p. 506, Pl. XV. 5 ...	...	...	...	...	10	(?)	
II. OECOPHORIDAE, p. 507							
ETHMIA, Hb., p. 507							
1 <i>colonella</i> , W., p. 507, Pl. XV. 6 ...	...	21	...	...	...	...	
III. HYPONOMEUTIDAE, pp. 508, 734							
BATRACHEDRA, Stn., pp. 508, 734							
1 <i>syrraphella</i> , W., pp. 509, 734, Pl. XV. 7 ...	...	22	...	...	...	22	
2 <i>ephelus</i> , W., p. 509, Pl. XV. 8 ...	...	...	15	...	...	...	
3 <i>bedelliella</i> , W., p. 509, Pl. XV. 9 ...	...	...	16	...	11	...	
4 <i>microstigma</i> , W., p. 510, Pl. XV. 10 ...	...	23	...	...	...	23	
5 <i>supercincta</i> , W., p. 510, Pl. XV. 11 ...	...	...	...	...	12	...	
6 <i>ruficiliata</i> , W., p. 510, Pl. XV. 12 ...	...	...	...	...	...	24	
7 <i>lomentella</i> , W., p. 511, Pl. XV. 13 ...	...	24	...	...	...	...	
8 <i>sophroniella</i> , W., p. 511, Pl. XV. 14 ...	...	25	...	...	...	...	
AGONISMUS, W., p. 512							
1 <i>flavipalpis</i> , W., p. 512, Pl. XV. 15 ...	...	...	...	...	13	...	
2 <i>coruscans</i> , W., p. 513, Pl. XV. 16 ...	...	...	...	...	...	25	
3 <i>argentiferus</i> , W., p. 513, Pl. XV. 17 ...	...	...	...	...	...	26	
ELACHISTA, Tr., p. 513							
1 <i>spilota</i> , W., p. 513, Pl. XV. 18 ...	...	...	...	...	14	...	
2 <i>longisquamella</i> , W., p. 514, Pl. XV. 19 ...	...	...	...	...	...	27	

# FAUNA HAWAIIENSIS

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
STAGMATOPHORA, HS., p. 514							
1 <i>incertulella</i> , Wkr., p. 515, Pl. XV. 20	...	...	...	...	15	...	Not Hawaiian: S. Pacific: Rapa (Opara Id.), Pitcairn Id. Hawaiiia ( <i>Ins.</i> ?), Pitcairn Id. Hawaiiia ( <i>Ins.</i> ?), New Guinea
1 <sup>a</sup> <i>tridigitella</i> , W., p. 515	...	...	...	...	...	...	
2 <i>honorariella</i> , W., p. 515, Pl. XV. 21	...	...	...	...	...	...	
3 <i>quadrifasciata</i> , W., p. 516, Pl. XV. 22	...	...	...	...	...	...	
4 <i>sordidella</i> , W., p. 516, Pl. XV. 23	23	...	...	...	...	...	
APHTHONETUS, W., p. 517							
1 <i>mediocris</i> , W., p. 517, Pl. XV. 24	...	...	...	...	16	...	
2 <i>fugitiva</i> , W., p. 518, Pl. XV. 25	...	...	...	...	...	...	
3 <i>kauaiensis</i> , W., p. 518, Pl. XV. 26	25	...	...	...	...	...	
4 <i>corticicolor</i> , W., p. 519, Pl. XV. 27	...	...	...	...	17	...	
5 <i>fluctuosa</i> , W., p. 519, Pl. XV. 28	26	...	...	...	...	...	
6 <i>passerella</i> , W., p. 520, Pl. XVI. 1	27	...	...	...	...	...	
7 <i>divergens</i> , W., p. 520, Pl. XVI. 2	...	...	17	...	...	...	
8 <i>bitincta</i> , W., p. 521, Pl. XVI. 3	...	...	...	...	18	...	
9 <i>columbella</i> , W., p. 521, Pl. XVI. 4	...	...	18	...	...	...	
10 <i>lichenalis</i> , W., p. 522, Pl. XVI. 5	...	...	...	4	...	...	
11 <i>digressa</i> , W., p. 522, Pl. XVI. 6	...	...	...	...	19	...	
12 <i>eleuthera</i> , W., p. 522, Pl. XVI. 7	...	...	...	...	...	28	
13 <i>confusa</i> , W., p. 523, Pl. XVI. 8	...	...	...	...	20	...	
14 <i>spurcata</i> , W., p. 523, Pl. XVI. 9	...	...	...	...	21	...	
15 <i>plumbifer</i> , W., p. 524, Pl. XVI. 10	28	...	...	...	...	...	
16 <i>trichophora</i> , W., p. 524, Pl. XVI. 11	29	...	...	...	...	...	
17 <i>veterella</i> , W., p. 525, Pl. XVI. 12	30	...	...	...	...	...	
18 <i>polia</i> , W., p. 525, Pl. XVI. 13	31	...	...	...	...	...	
19 <i>subocellata</i> , W., p. 526, Pl. XVI. 14	...	...	...	...	22	...	
20 <i>nemo</i> , W., p. 526, Pl. XVI. 15	...	...	...	...	23	...	
21 <i>exsul</i> , W., p. 526, Pl. XVI. 16	...	...	...	...	...	29	
22 <i>albicinerea</i> , W., p. 527, Pl. XVI. 17	32	...	...	...	...	...	
23 <i>diffusa</i> , W., p. 527, Pl. XVI. 18	33	...	...	...	24	...	
24 <i>hirsuta</i> , W., p. 528, Pl. XVI. 19	34	...	...	...	...	...	
25 <i>humerala</i> , W., p. 528, Pl. XVI. 20	...	...	...	...	25	...	
26 <i>puncticiliata</i> , W., p. 529, Pl. XVI. 21	...	...	...	...	...	30	
27 <i>aspersa</i> , Btl., p. 529, Pl. XVI. 22	...	26	...	...	...	...	
28 <i>elegans</i> , W., p. 530, Pl. XVI. 23	...	...	...	...	26	...	
29 <i>sagittata</i> , W., p. 530, Pl. XVI. 24	35	...	...	...	...	...	
RHINOMACTRUM, W., p. 531							
1 <i>rutilellum</i> , W., p. 531, Pl. XVI. 25	36	...	...	...	...	...	
2 <i>scapulellum</i> , W., p. 531, Pl. XVI. 26	...	...	...	...	...	31	
NEELYSIA, W., p. 532							
1 <i>cuprea</i> , W., p. 532, Pl. XVI. 27	37	...	...	...	...	...	
2 <i>tigrina</i> , Btl., p. 533, Pl. XVI. 28	...	...	...	...	27	...	
3 <i>lignicolor</i> , W., p. 533, Pl. XVII. 1	...	...	...	...	28	...	
4 <i>fuscodentata</i> , W., p. 534, Pl. XVII. 2	...	...	...	...	...	32	
5 <i>cleodorella</i> , W., p. 535, Pl. XVII. 3	...	...	...	...	...	33	
6 <i>anthinella</i> , W., p. 535, Pl. XVII. 4	...	...	...	5	...	...	
7 <i>repandella</i> , W., p. 536, Pl. XVII. 5	...	...	19	...	...	...	
8 <i>psaroderma</i> , W., p. 536, Pl. XVII. 6	...	27	...	...	...	...	
9 <i>municeps</i> , W., p. 537, Pl. XVII. 7	38	...	...	...	29	...	
10 <i>paltodorella</i> , W., p. 537, Pl. XVII. 8	39	...	...	...	...	...	
11 <i>fuscifusa</i> , W., p. 538, Pl. XVII. 9	40	...	...	...	...	...	
12 <i>agnetella</i> , W., p. 538, Pl. XVII. 10	...	...	...	...	30	...	
13 <i>rotifer</i> , W., p. 539, Pl. XVII. 11	...	...	20	...	...	...	
14 <i>basivittata</i> , W., p. 539, Pl. XVII. 12	...	...	...	...	31	...	
15 <i>pluviella</i> , W., p. 540, Pl. XVII. 13	...	...	21	...	...	...	
16 <i>ningorifera</i> , W., p. 540, Pl. XVII. 14	...	...	...	...	32	...	
17 <i>petalifera</i> , W., p. 541, Pl. XVII. 15	...	...	...	...	33	...	



	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii
NEELYSIA ( <i>contd.</i> )						
18 <i>subaurata</i> , W., p. 541, Pl. XVII. 16	41	...	...	...	...	...
19 <i>exaltata</i> , W., p. 542, Pl. XVII. 17	...	...	...	...	34	...
20 <i>poeciloceras</i> , W., p. 542, Pl. XVII. 18	...	...	...	...	35	...
21 <i>rediviva</i> , W., p. 543, Pl. XVII. 19	42	...	...	...	...	...
22 <i>ningorella</i> , W., p. 543, Pl. XVII. 20	...	...	...	...	36	...
23 <i>nemoricola</i> , W., p. 544, Pl. XVII. 21	...	...	22	...	...	...
24 <i>argyresthiella</i> , W., p. 544, Pl. XVII. 22	43	28	...	...	...	34
25 <i>madella</i> , W., p. 545, Pl. XVII. 23	44	29	23	...	...	...
26 <i>tischeriella</i> , W., p. 545, Pl. XVII. 24	45	...	...	...	...	...
27 <i>complanella</i> , W., p. 546, Pl. XVII. 25	...	...	24	...	...	...
28 <i>sciurella</i> , W., p. 546, Pl. XVII. 26	...	...	...	...	37	...
29 <i>incongrua</i> , W., p. 546, Pl. XVII. 27	...	...	...	...	38	...
30 <i>semifusa</i> , W., p. 547, Pl. XVII. 28	...	...	25	...	...	...
31 <i>terminella</i> , W., p. 547, Pl. XVIII. 1	...	...	...	...	39	...
DYSPHORIA, W., p. 547						
1 <i>semicolon</i> , W., p. 548, Pl. XVIII. 2	46	...	...	...	...	...
BUBALOCERAS, W., p. 548						
1 <i>subburneum</i> , W., p. 549, Pl. XVIII. 3	...	...	26	...	...	...
HYPOSMOCOMA, Btl., p. 549, 734						
1 <sup>a</sup> <i>exornata</i> , W. + <i>exornata</i> , W., p. 550, Pl. XVIII. 4	...	...	...	...	...	35 <sup>a</sup>
1 <sup>b</sup> <i>exornata</i> , W. + <i>flavicosta</i> , W., p. 551, Pl. XVIII. 5	...	...	...	...	...	35 <sup>b</sup>
2 <i>oculifera</i> , W., p. 551, Pl. XVIII. 6	47	...	...	...	...	...
3 <i>nigralbida</i> , W., p. 551, Pl. XVIII. 7	48	...	...	...	...	...
4 <i>nvidorsella</i> , W., p. 552, Pl. XVIII. 8	49	...	...	...	...	...
5 <i>corvina</i> , Btl., p. 553, Pl. XVIII. 9	...	...	27	...	40	...
6 <i>discella</i> , W., p. 553, Pl. XVIII. 10	50	...	...	...	...	...
7 <i>divisa</i> , W., p. 554, Pl. XVIII. 11	51	...	...	...	...	...
8 <i>partita</i> , W., p. 554, Pl. XVIII. 12	...	...	...	...	...	36
9 <i>trossulella</i> , W., pp. 554, 734, Pl. XVIII. 13	...	30	...	...	...	...
10 <i>atrovittella</i> , W., p. 555, Pl. XVIII. 14	...	...	...	...	...	37
11 <i>nebulifera</i> , W., pp. 555, 734, Pl. XVIII. 15	...	31	...	...	...	...
12 <i>torquata</i> , W., p. 556, Pl. XVIII. 16	52	...	...	...	...	...
13 <i>notabilis</i> , W., p. 556, Pl. XVIII. 17	...	...	28	...	...	...
14 <i>lebetella</i> , W., p. 557, Pl. XVIII. 18	...	...	...	...	41	...
15 <i>tenuipalpis</i> , W., p. 557, Pl. XVIII. 19	...	...	29	...	...	...
16 <i>commensella</i> , W., p. 558, Pl. XVIII. 20	...	...	...	...	...	38
17 <i>leporella</i> , W., p. 558, Pl. XVIII. 21	53	...	...	...	...	...
18 <i>abjecta</i> , Btl., pp. 559, 734, Pl. XVIII. 22	...	32	...	...	...	...
19 <i>blackburnii</i> , Btl., pp. 559, 734, Pl. XVIII. 23	...	...	...	...	...	...
20 <i>cupreomaculata</i> , W., p. 561, Pl. XVIII. 24	54	33	...	...	42	...
21 <i>progressa</i> , W., p. 561, Pl. XVIII. 25	...	...	30	...	...	...
22 <sup>a</sup> <i>domicolens</i> , Btl. + <i>domicolens</i> , Btl., p. 562, Pl. XVIII. 26	...	...	31	6	44	39 <sup>a</sup>
22 <sup>b</sup> <i>domicolens</i> , Btl. + <i>suffusa</i> , W., p. 563, Pl. XVIII. 27	55	...	...	...	...	39 <sup>b</sup>
23 <sup>a</sup> <i>lupella</i> , W. + <i>lupella</i> , W., p. 563, Pl. XVIII. 28	56 <sup>a</sup>	...	...	...	...	...
23 <sup>b</sup> <i>lupella</i> , W. + <i>suffusella</i> , W., pp. 564, 734, Pl. XIX. 1	56 <sup>b</sup>	34	32 <sup>a</sup>	...	45 <sup>a</sup>	...
23 <sup>c</sup> <i>lupella</i> , W. + <i>candidella</i> , W., p. 564, Pl. XIX. 2	56 <sup>c</sup>	...	32 <sup>b</sup>	7	45 <sup>b</sup>	40
24 <i>mediella</i> , W., pp. 565, 734, Pl. XIX. 3	...	35	...	...	...	...
25 <i>sabulella</i> , W., p. 565, Pl. XIX. 4	57	...	...	...	...	...
26 <i>albifrontella</i> , W., p. 565, Pl. XIX. 5	...	...	33	...	...	...

Distribution

# FAUNA HAWAIIENSIS

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
HYPOSMOCOMA (contd.)							
27 <i>humero vittella</i> , W., p. 566, Pl. XIX. 6	...	36	...	...	...	...	
28 <sup>a</sup> <i>cincta</i> , W. + <i>cincta</i> , W., p. 566, Pl. XIX. 7	...	58 <sup>a</sup>	...	...	...	...	
28 <sup>b</sup> <i>cincta</i> , W. + <i>adjacens</i> , W., p. 567, Pl. XIX. 8	...	58 <sup>b</sup>	...	...	...	...	
29 <i>mediospurcata</i> , W., p. 567, Pl. XIX. 9	...	...	...	...	...	41	
30 <i>tripartita</i> , W., p. 567, Pl. XIX. 10	...	...	34	...	...	...	
31 <i>thoracella</i> , W., p. 568, Pl. XIX. 11	...	...	...	8	...	...	
32 <i>limata</i> , W., p. 568, Pl. XIX. 12	...	...	...	...	...	42	
33 <i>sublimata</i> , W., p. 568, Pl. XIX. 13	...	...	...	...	46	...	
34 <i>advena</i> , W., p. 569, Pl. XIX. 14	...	...	35	...	...	...	
35 <i>subflavidella</i> , W., p. 569, Pl. XIX. 15	...	...	...	...	47	...	
36 <i>auroargentea</i> , W., p. 570, Pl. XIX. 16	...	...	...	...	48	...	
37 <i>illuminata</i> , W., p. 570, Pl. XIX. 17	...	...	...	...	49	...	
38 <i>auripennis</i> , Btl., p. 571, Pl. XIX. 18	...	...	...	...	50	...	
39 <i>rhabdophora</i> , W., p. 571, Pl. XIX. 19	...	...	36	...	...	...	
40 <i>costimaculata</i> , W., p. 572, Pl. XIX. 20	...	...	37	...	...	...	
41 <i>virgata</i> , W., p. 572, Pl. XIX. 21	...	...	38	...	51	...	
42 <i>bilineata</i> , W., p. 573, Pl. XIX. 22	...	37	...	...	...	...	
43 <i>haleakalae</i> , Btl., p. 573, Pl. XIX. 23	...	...	...	...	52	...	
44 <i>lucifer</i> , W., p. 574, Pl. XIX. 24	...	...	39	...	...	...	
45 <i>evanescens</i> , W., p. 574, Pl. XIX. 25	...	...	...	...	53	...	
46 <i>ferricolor</i> , W., p. 575, Pl. XIX. 26	...	...	...	...	...	43	
47 <i>impunctata</i> , W., p. 575, Pl. XIX. 27	...	...	...	...	...	44	
48 <i>straminella</i> , W., p. 576, Pl. XIX. 28	...	...	...	...	...	45	
49 <i>metallica</i> , W., p. 576, Pl. XX. 1	...	...	...	...	...	46	
50 <i>continuella</i> , W., p. 577, Pl. XX. 2	...	...	...	...	54	...	
51 <i>indicella</i> , W., p. 577, Pl. XX. 3	...	...	...	...	55	...	
52 <i>patriciella</i> , W., p. 577, Pl. XX. 4	...	...	...	...	56	...	
53 <i>butalidella</i> , W., p. 578, Pl. XX. 5	...	...	...	...	57	...	
54 <i>unistriata</i> , W., p. 578, Pl. XX. 6	...	...	40	...	...	...	
55 <i>ludificata</i> , W., p. 579, Pl. XX. 7	...	...	...	...	58	...	
56 <i>lineata</i> , W., p. 579, Pl. XX. 8	...	...	...	...	59	...	
57 <i>propinqua</i> , W., p. 580, Pl. XX. 9	...	...	41	...	...	...	
58 <i>admirationis</i> , W., p. 580, Pl. XX. 10	...	...	42	...	...	...	
59 <i>quadristriata</i> , W., p. 581, Pl. XX. 11	...	...	43	...	...	...	
60 <i>numida</i> , W., p. 581, Pl. XX. 12	...	...	...	...	60	...	
61 <i>nigrescens</i> , W., p. 581, Pl. XX. 13	...	...	...	...	...	47	
62 <i>fuscopurpurea</i> , W., p. 582, Pl. XX. 14	...	...	...	...	61	...	
63 <i>nigra</i> , W. (+ <i>niger</i> , W.), p. 582, Pl. XX. 15	...	...	44	...	...	...	
64 <i>lacertella</i> , W., p. 582, Pl. XX. 16	...	...	...	...	62	...	
65 <i>trilunella</i> , W., p. 583, Pl. XX. 17	...	...	...	...	63	...	
66 <i>niveiceps</i> , W., p. 583, Pl. XX. 18	...	...	45	9	...	...	
67 <i>punctifumella</i> , W., p. 584, Pl. XX. 19	...	...	...	...	64	...	
68 <i>lunifer</i> , W., p. 584, Pl. XX. 20	...	...	...	...	65	...	
69 <i>punctiplicata</i> , W., p. 584, Pl. XX. 21	...	...	46	...	...	...	
70 <i>marginenotata</i> , W., p. 585, Pl. XX. 22	59	...	...	...	...	...	
71 <i>vermiculata</i> , W., p. 585, Pl. XX. 23	...	...	47	...	...	48	
72 <i>enixa</i> , W., p. 586, Pl. XX. 24	60	...	...	...	...	...	
73 <i>lugens</i> , W., p. 586, Pl. XX. 25	...	...	...	...	66	...	
74 <i>ocellata</i> , W., p. 586, Pl. XX. 26	61	...	...	...	...	...	
75 <i>adolescens</i> , W., p. 587, Pl. XX. 27	...	...	...	...	...	49	
76 <i>emendata</i> , W., p. 587, Pl. XX. 28	...	...	...	...	67	...	
77 <i>ensifer</i> , W., p. 588, Pl. XXI. 1	...	...	...	...	...	50	
78 <i>tricincta</i> , W., p. 588, Pl. XXI. 2	...	...	...	...	...	51	
79 <i>semifusca</i> , W., p. 589, Pl. XXI. 3	...	...	...	...	...	52	

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
HYPOSMOCOMA (contd.)							
80 <i>pucciniella</i> , W., p. 589, Pl. XXI. 4 ...	...	...	...	...	...	53	
81 <sup>a</sup> <i>scepticella</i> , W. + <i>scepticella</i> , W., p. 590, Pl. XXI. 6 ...	...	...	...	...	68 <sup>a</sup>	...	
81 <sup>b</sup> <i>scepticella</i> , W. + <i>dubia</i> , W., p. 590, Pl. XXI. 5 ...	...	...	...	...	68 <sup>b</sup>	...	
82 <i>stigmatella</i> , W., p. 591, Pl. XXI. 7 ...	...	...	48	...	...	...	
83 <i>pallidipalpis</i> , W., p. 591, Pl. XXI. 8 ...	...	...	49	...	...	...	
84 <i>genitalis</i> , W., p. 592, Pl. XXI. 9 ...	...	...	...	...	69	...	
85 <i>fractinubella</i> , W., p. 592, Pl. XXI. 10 ...	...	...	...	...	70	...	
86 <i>fractivittella</i> , W., p. 593, Pl. XXI. 11 ...	62	...	...	...	...	...	
87 <i>intermixta</i> , W., p. 593, Pl. XXI. 12 ...	...	...	50	...	...	...	
88 <i>geminella</i> , W., p. 594, Pl. XXI. 13 ...	63	...	...	...	...	...	
89 <i>picticornis</i> , W., p. 594, Pl. XXI. 14 ...	...	...	51	...	71	...	
90 <i>phantasmatella</i> , W., p. 595, Pl. XXI. 15 ...	64	...	...	...	...	...	
91 <i>ossea</i> , W., p. 595, Pl. XXI. 16 ...	...	...	...	...	...	54	
92 <i>argentea</i> , W., pp. 596, 734, Pl. XXI. 17 ...	...	38	52	...	...	...	
93 <i>subargentea</i> , W., p. 596, Pl. XXI. 18 ...	65	...	...	...	...	...	
94 <i>lactea</i> , W., p. 597, Pl. XXI. 19 ...	66	...	...	...	...	...	
95 <i>lactiretella</i> , W., p. 597, Pl. XXI. 20 ...	...	...	...	...	72	...	
96 <i>persimilis</i> , W., p. 598, Pl. XXI. 21 ...	...	...	...	...	...	55	
97 <i>trimaculata</i> , W., p. 598, Pl. XXI. 22 ...	...	39	...	...	...	...	
98 <i>albonivea</i> , W., p. 599, Pl. XXI. 23 ...	...	40	...	...	...	...	
99 <i>carbonenotata</i> , W., p. 599, Pl. XXI. 24 ...	67	...	...	...	...	...	
100 <i>alliterata</i> , W., pp. 600, 734, Pl. XXI. 25 ...	...	41	53	...	73	56	
101 <i>nigrodentata</i> , W., p. 600, Pl. XXI. 26 ...	68	...	...	...	...	...	
102 <i>obliterata</i> , W., p. 601, Pl. XXI. 27 ...	69	...	...	...	...	...	
103 <i>bacillella</i> , W., p. 601, Pl. XXI. 28 ...	70	...	...	...	...	...	
104 <i>canella</i> , W., p. 602, Pl. XXII. 1 ...	71	42	54	...	...	57	
105 <i>schismatica</i> , W., p. 603, Pl. XXII. 2 ...	72	...	...	...	...	...	
106 <i>cinerosparsa</i> , W., p. 603, Pl. XXII. 3 ...	73	...	...	...	...	...	
107 <i>saccophora</i> , W., p. 604, Pl. XXII. 4 ...	74	43	55	...	...	...	
108 <i>modesta</i> , W., p. 604, Pl. XXII. 5 ...	75	...	...	...	...	...	
109 <i>tomentosa</i> , W., pp. 605, 734, Pl. XXII. 6 ...	...	...	...	...	...	58	
110 <i>dorsella</i> , W., pp. 605, 734, Pl. XXII. 7 ...	...	44	...	...	...	...	
111 <i>fallacella</i> , W., p. 605, Pl. XXII. 8 ...	76	...	...	...	...	...	
112 <i>falsimella</i> , W., p. 606, Pl. XXII. 9 ...	...	...	...	...	74	...	
113 <i>ochreovittella</i> , W., p. 606, Pl. XXII. 10 ...	...	...	...	...	...	59	
114 <i>quadripunctata</i> , W., p. 607, Pl. XXII. 11 ...	77	...	...	...	...	...	
115 <i>sudorella</i> , W., p. 607, Pl. XXII. 12 ...	78	...	...	...	...	...	
116 <i>vicina</i> , W., p. 607, Pl. XXII. 13 ...	...	45	...	...	...	...	
117 <i>fulvida</i> , W., p. 608, Pl. XXII. 14 ...	79	...	56	...	...	...	
118 <i>sideritis</i> , W., p. 608, Pl. XXII. 15 ...	...	...	...	...	75	...	
119 <i>obscura</i> , W., p. 609, Pl. XXII. 16 ...	...	...	...	...	76	...	
120 <i>scandens</i> , W., p. 609, Pl. XXII. 17 ...	80	...	...	...	...	...	
121 <i>maestella</i> , W., p. 610, Pl. XXII. 18 ...	81	...	...	...	...	...	
122 <i>fulvocervina</i> , W., p. 610, Pl. XXII. 19 ...	82	...	...	...	...	...	
123 <i>carnea</i> , W., p. 610, Pl. XXII. 20 ...	83	...	...	...	...	...	
124 <i>roseofulva</i> , W., p. 611, Pl. XXII. 21 ...	84	...	...	...	...	...	
125 <i>subsericea</i> , W., p. 611, Pl. XXII. 22 ...	85	...	57	10	...	60	
126 <i>ochreocervina</i> , W., p. 612, Pl. XXII. 23 ...	...	46	...	...	...	...	
127 <i>syrrhaptēs</i> , W., p. 612, Pl. XXII. 24 ...	86	...	...	...	...	...	
128 <i>paradoxa</i> , W., p. 613, Pl. XXII. 25 ...	87	...	58	...	...	...	
129 <i>mimema</i> , W., p. 613, Pl. XXII. 26 ...	...	...	...	...	77	...	
130 <i>bella</i> , W., p. 614, Pl. XXII. 27 ...	88	...	...	...	...	...	
131 <i>rusius</i> , W., p. 614, Pl. XXII. 28 ...	...	...	59	...	...	...	
132 <i>auropurpurea</i> , W., p. 614, Pl. XXIII. 1 ...	...	47	...	...	...	...	
133 <i>inversella</i> , W., p. 615, Pl. XXIII. 2 ...	...	48	...	...	...	...	

# FAUNA HAWAIIENSIS

	Kauai	Oahu	Molokai	Lanai	Mau	Hawaii	Distribution
HYPOSMOCOMA (contd.)							
134 <i>vinicolor</i> , W., p. 615, Pl. XXIII. 3 ...	...	49	...	...	...	...	
135 <i>adelphella</i> , W., p. 615, Pl. XXIII. 4 ...	89	...	...	...	...	61	
136 <i>metrosiderella</i> , W., p. 616, Pl. XXIII. 5 ...	90	50	...	...	...	...	
137 <i>similis</i> , W., p. 617, Pl. XXIII. 6 ...	...	...	...	...	...	62	
138 <i>calva</i> , W., p. 617, Pl. XXIII. 7 ...	...	...	...	...	...	63	
139 <i>tarsimaculata</i> , W., pp. 618, 734, Pl. XXIII. 8 ...	91	51	...	...	...	...	
140 <i>ochreociliata</i> , W., p. 618, Pl. XXIII. 9 ...	...	...	...	...	...	64	
141 <i>malornata</i> , W., p. 619, Pl. XXIII. 10 ...	92	...	60	...	78	65	
142 <i>quinguemaculata</i> , W., p. 619, Pl. XXIII. 11 ...	...	...	...	...	...	66	
143 <i>conditella</i> , W., p. 620, Pl. XXIII. 12 ...	93	...	...	...	...	...	
144 <i>montivolans</i> , Btl., p. 620, Pl. XXIII. 13 ...	...	52	...	...	...	...	
145 <i>iodes</i> , W., p. 621, Pl. XXIII. 14 ...	...	...	61	...	...	...	
146 <i>liturata</i> , W., p. 622, Pl. XXIII. 15 ...	...	...	62	...	...	67	
147 <i>mimica</i> , W., p. 622, Pl. XXIII. 16 ...	...	...	63	...	...	...	
148 <i>parda</i> , Btl., p. 623, Pl. XXIII. 17 ...	...	...	...	...	79	68	
149 <i>lixiviella</i> , W., p. 623, Pl. XXIII. 18 ...	94	...	...	...	...	...	
150 <i>saliaris</i> , W., p. 624, Pl. XXIII. 19 ...	...	...	...	...	...	69	
151 <i>phalacra</i> , W., p. 625, Pl. XXIII. 20 ...	95	...	...	...	...	...	
152 <i>pseudolita</i> , W., p. 625, Pl. XXIII. 21 ...	...	53	64	...	...	70	
153 <i>irregularis</i> , W., p. 626, Pl. XXIII. 22 ...	96	...	...	...	...	...	
154 <i>fervida</i> , W., p. 626, Pl. XXIII. 23 ...	...	...	65	...	...	...	
155 <i>torrella</i> , W., p. 627, Pl. XXIII. 24 ...	...	...	66	...	...	...	
156 <i>arenella</i> , W., p. 627, Pl. XXIII. 25 ...	...	...	...	...	...	71	
157 <i>nebulifera</i> , W., pp. 628, 735, Pl. XXIII. 26 ...	...	54	...	...	80	...	
158 <i>rubescens</i> , W., p. 628, Pl. XXIII. 27 ...	97	...	...	...	81	...	
159 <i>scolopax</i> , W., p. 629, Pl. XXIII. 28 ...	98	...	67	...	...	...	
160 <i>subscolopax</i> , W., p. 629, Pl. XXIV. 1 ...	...	...	...	...	...	72	
161 <i>tetraonella</i> , W., p. 630, Pl. XXIV. 2 ...	...	...	...	...	...	73	
162 <i>somatodes</i> , W., p. 630, Pl. XXIV. 3 ...	...	...	...	...	...	74	
163 <i>belophora</i> , W., p. 631, Pl. XXIV. 4 ...	...	55	...	...	...	...	
164 <i>turdella</i> , W., p. 631, Pl. XXIV. 5 ...	...	...	...	11	...	...	
165 <i>subcitrella</i> , W., p. 632, Pl. XXIV. 6 ...	99	...	...	...	...	...	
166 <i>inflexa</i> , W., p. 632, Pl. XXIV. 7 ...	...	...	...	...	82	...	
167 <i>brevistrigata</i> , W., p. 633, Pl. XXIV. 8 ...	100	...	...	...	...	...	
168 <i>discolor</i> , W., p. 633, Pl. XXIV. 9 ...	...	...	...	...	...	75	
169 <i>fuscotogata</i> , W., p. 634, Pl. XXIV. 10 ...	...	...	68	...	...	...	
170 <i>radiatella</i> , W., pp. 634, 735, Pl. XXIV. 11 ...	101	56	69	...	...	76	
171 <i>barbata</i> , W., p. 635, Pl. XXIV. 12 ...	...	...	70	...	...	...	
172 <i>fractistriata</i> , W., p. 635, Pl. XXIV. 13 ...	...	57	...	12	...	...	
173 <i>longitudinalis</i> , W., p. 636, Pl. XXIV. 14 ...	...	58	71	...	...	77	
174 <i>centralis</i> , W., p. 636, Pl. XXIV. 15 ...	102	...	...	...	...	...	
175 <sup>a</sup> <i>chilonella</i> , W. + <i>trio cellata</i> , W., p. 637, Pl. XXIV. 16 ...	103 <sup>a</sup>	...	72 <sup>a</sup>	...	...	78 <sup>a</sup>	
175 <sup>b</sup> <i>chilonella</i> , W. + <i>chilonella</i> , W., p. 637, Pl. XXIV. 17 ...	103 <sup>b</sup>	...	...	...	...	78 <sup>b</sup>	
175 <sup>c</sup> <i>chilonella</i> , W. + <i>venosa</i> , W., p. 638, Pl. XXIV. 18 ...	103 <sup>c</sup>	...	72 <sup>b</sup>	...	...	78 <sup>c</sup>	
175 <sup>d</sup> <i>chilonella</i> , W. + <i>percondita</i> , W., p. 638, Pl. XXIV. 19 ...	103 <sup>d</sup>	...	...	...	...	78 <sup>d</sup>	
176 <i>epicharis</i> , W., p. 639, Pl. XXIV. 20 ...	...	...	73	...	...	...	
177 <i>subnitida</i> , W., p. 639, Pl. XXIV. 21 ...	...	...	...	...	...	79	
HYPERDASYS, W., p. 640							
1 <i>semiustus</i> , W., p. 640, Pl. XXIV. 22 ...	104	...	...	...	...	...	
2 <i>arundinicolor</i> , W., p. 641, Pl. XXIV. 23 ...	105	...	...	...	...	...	
3 <i>unicolor</i> , W., p. 642, Pl. XXIV. 24 ...	...	...	74	...	...	...	
4 <i>cryptogamiellus</i> , W., p. 642, Pl. XXIV. 25 ...	106	59	75	13	...	80	

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
EUPERISSUS, Btl., pp. 643, 735							
1 <i>cristatus</i> , Btl., pp. 643, 735, Pl. XXIV. 26	...	60	76	...	...	81	
SEMNOPREPIA, W., p. 644							
1 <i>fulvogrisea</i> , W., p. 644, Pl. XXIV. 27	107	...	...	...	...	...	
2 <i>petroptilota</i> , W., p. 645, Pl. XXIV. 28	...	...	...	...	83	82	
3 <i>margella</i> , W., p. 645, Pl. XXV. 1 ...	...	...	...	...	...	83	
DIPLOSARA, Meyr., p. 646							
1 <i>lignivora</i> , Btl., p. 647, Pl. XXV. 2	108	61	77	14	...	84	
BLASTOBASIS, Z., p. 648							
1 <i>inana</i> , Btl., p. 648, Pl. XXV. 3 ...	...	62	...	15	...	...	
ENDROSIS, Hb., p. 648							
1 <i>lactella</i> , Schiff., p. 649 ...	...	...	...	...	...	85	Europe, W. Asia, Madeiras, S. Africa, N. America, Australia, New Zealand
OECIA, Wlsm., p. 649							
1 <i>maculata</i> , Wlsm., p. 649, Pl. XXV. 4	...	...	...	...	...	...	Hawaii (Ins.?), Brazil, W. Indies
MAPSIDIUS, W., p. 650							
1 <i>auspicata</i> , W., p. 650, Pl. XXV. 5 ...	109	...	...	16	...	...	
2 <i>quadridentata</i> , W., p. 651, Pl. XXV. 6	...	...	...	17	...	...	
3 <i>iridescent</i> , W., p. 651, Pl. XXV. 7 ...	110	...	...	...	...	...	
PRAYS, Hb., pp. 651, 735							
1 <i>fulvocanellus</i> , W., pp. 652, 735, Pl. XXV. 8—10 ...	111	63	78	18	84	86	
PLUTELLA, Schrank, p. 652							
1 <i>maculipennis</i> , Crt., p. 652 ...	112	...	79	...	...	87	Europe, Asia, Africa, N. and S. America, Australia, New Zealand, Oceania
2 <i>albovenosa</i> , W., p. 653, Pl. XXV. 11	...	64	...	...	...	88	
IV. CARPOSINIDAE, pp. 654, 735.							
HETEROCROSSA, Meyr., pp. 654, 735							
1 <i>plumbeonitida</i> , W., p. 654, Pl. XII. 11	113	...	...	...	...	...	
2 <i>graminicolor</i> , W., p. 654, Pl. XII. 12	114	...	...	...	...	...	
3 <i>olivaceonitens</i> , W., p. 655, Pl. XII. 13	115	...	...	...	...	...	
4 <i>subolivacea</i> , W., p. 655, Pl. XII. 14	...	...	...	19	...	...	
5 <i>viridis</i> , W., p. 656, Pl. XII. 15 ...	116	...	...	...	...	...	
6 <i>nigronotata</i> , W., p. 656, Pl. XII. 16	...	...	...	...	...	89	
7 <i>crinifera</i> , W., p. 657, Pl. XII. 17 ...	...	65	80	...	...	...	
8 <i>herbarum</i> , W., pp. 658, 735, Pl. XII. 18	...	66	...	20	...	...	
9 <i>graminis</i> , W., p. 658, Pl. XII. 19 ...	117	...	...	...	...	...	
10 <i>tincta</i> , W., p. 659, Pl. XII. 20 ...	118	...	...	21	...	90	
11 <i>gemmata</i> , W., p. 660, Pl. XII. 21 ...	...	...	...	...	...	91	
12 <i>subumbrata</i> , W., pp. 660, 735, Pl. XII. 22 ...	...	67	...	...	...	...	
13 <i>bicincta</i> , W., p. 661, Pl. XII. 23 ...	...	...	81	...	...	...	
14 <i>dispar</i> , W., p. 661, Pl. XII. 24 ...	...	...	...	...	...	92	
15 <i>pygmaeella</i> , W., p. 662 ...	...	...	...	...	...	93	
16 <i>latifasciata</i> , W., p. 662, Pl. XII. 25	...	...	...	...	...	94	
17 <sup>a</sup> <i>corticella</i> , W. + <i>semitogata</i> , W., p. 662, Pl. XII. 26 ...	119 <sup>a</sup>	...	...	...	...	...	
17 <sup>b</sup> <i>corticella</i> , W. + <i>piperatella</i> , W., p. 663, Pl. XII. 27 ...	119 <sup>b</sup>	...	...	...	...	...	
17 <sup>c</sup> <i>corticella</i> , W. + <i>corticella</i> , W., p. 664, Pl. XII. 28 ...	119 <sup>c</sup>	68	82	...	...	...	
18 <i>ferruginea</i> , W., p. 664, Pl. XIII. 1	...	...	83	...	...	...	
19 <i>togata</i> , W., p. 665, Pl. XIII. 2 ...	...	...	...	...	85	...	
20 <i>divaricata</i> , W., p. 665, Pl. XIII. 3	120	...	...	...	...	...	

# FAUNA HAWAIIENSIS

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
HETEROCROSSA (contd.)							
21 <i>nigromaculata</i> , W., pp. 666, 735, Pl. XIII. 4 ...	...	69	...	...	...	...	
22 <i>distincta</i> , W., p. 666, Pl. XIII. 5 ...	121	...	...	...	...	...	
23 <i>ceruinella</i> , W., p. 667, Pl. XIII. 6 ...	122	...	...	...	...	...	
24 <i>mauii</i> , W., p. 668, Pl. XIII. 7 ...	...	...	...	...	86	...	
25 <i>irrorata</i> , W., p. 668, Pl. XIII. 8 ...	...	...	...	22	...	...	
26 <i>atronotata</i> , W., p. 669, Pl. XIII. 9 ...	...	...	...	...	87	...	
27 <i>inscripta</i> , W., p. 669, Pl. XIII. 10 ...	...	...	...	...	...	95	
28 <i>pusilla</i> , W., pp. 670, 735, Pl. XIII. 11 ...	...	70	...	...	...	...	
29 <i>trigononotata</i> , W., p. 670, Pl. XIII. 12 ...	...	...	84	...	88	...	
30 <i>punctulata</i> , W., p. 671, Pl. XIII. 13 ...	...	...	85	...	...	...	
31 <i>achroana</i> , Meyr., p. 671, Pl. XIII. 14 ...	...	...	...	...	...	96	
32 <i>solutella</i> , W., p. 672, Pl. XIII. 15 ...	...	...	...	...	...	97	
33 <i>gracillima</i> , W., p. 672, Pl. XIII. 16 ...	123	...	86	...	89	98	
V. TORTRICIDAE, pp. 673, 735							
I. OLETHREUTINAE, p. 673							
ECCOPTOCERA, W., pp. 673, 735							
1 <i>foetorivorans</i> , Btl., pp. 674, 735, Pl. X. 12—14 ...	124	71	87	23	90	99	
CROCIDOSEMA, Z., pp. 675, 736							
1 <i>plebeiana</i> , Z., pp. 675, 736, Pl. X. 15 ...	125	72	88	24	91	100	Europe, Australia, W. Indies, C. and S. America, Madeiras, Canaries
GYPSONOMA, Meyr., pp. 676, 736							
1 <i>leprarum</i> , W., pp. 676, 736, Pl. X. 16 ...	...	73	89	...	...	...	
ADENONEURA, W., p. 677							
1 <i>falsifalcellum</i> , W., p. 677, Pl. X. 17 ...	...	...	...	...	...	101	
2 <i>marcidellum</i> , W., p. 678, Pl. X. 18 ...	...	74	...	...	...	...	
3 <i>plicatum</i> , W., p. 678, Pl. X. 19 ...	...	...	...	...	...	102	
4 <i>latifemoris</i> , W., p. 679, Pl. X. 20 ...	...	...	...	...	92	103	
5 <i>montanum</i> , W., p. 679, Pl. X. 21 ...	...	...	...	...	...	104	
6 <i>rufipennis</i> , Btl., p. 680, Pl. X. 22 ...	126	75	...	...	...	...	
CRYPTOPHLEBIA, Wlsm., p. 680							
1 <sup>a</sup> <i>illepida</i> , Btl. + <i>illepida</i> , Btl., p. 681, Pl. X. 23 ...	...	76 <sup>a</sup>	...	...	...	105 <sup>a</sup>	
1 <sup>b</sup> <i>illepida</i> , Btl. + <i>fulva</i> , W., p. 681, Pl. X. 24 ...	...	76 <sup>b</sup>	...	...	...	105 <sup>b</sup>	
1 <sup>c</sup> <i>illepida</i> , Btl. + <i>suffusa</i> , W., p. 682, Pl. X. 25 ...	...	...	...	...	...	105 <sup>c</sup>	
2 <i>tetrao</i> , W., p. 683, Pl. X. 26 ...	...	...	...	...	...	106	
3 <i>vulpes</i> , W., p. 683, Pl. X. 27 ...	...	...	...	...	...	107	
ENARMONIA, Hb., pp. 683, 736							
1 <i>conspicua</i> , W., p. 684, Pl. X. 28 ...	...	...	...	...	93	...	
2 <i>walsinghami</i> , Btl., pp. 684, 736, Pl. XI. 1 ...	...	77	...	...	...	108	
3 <i>crassicornis</i> , W., p. 685, Pl. XI. 2 ...	...	...	...	...	...	109	
4 <i>storeella</i> , W., p. 686, Pl. XI. 3 ...	...	...	...	...	94	...	
5 <i>obliqua</i> , W., p. 686, Pl. XI. 4 ...	...	...	...	...	...	110	
BACTRA, Stph., p. 687							
1 <i>straminea</i> , Btl., p. 687, Pl. XI. 5 ...	127	78	90	25	95	111	
II. TORTRICINAE, p. 689							
PARARRHAPTICA, W., p. 689							
1 <i>perkinsana</i> , W., p. 689, Pl. XI. 6 ...	...	...	91	...	96	...	
ARCHIPS, Hb., pp. 690, 736							
1 <i>postvittanus</i> , Wkr., pp. 690, 736, Pl. XI. 7 ...	128	79	...	...	...	...	Australia, New Caledonia

	Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
ARCHIPS ( <i>contd.</i> )							
2 <i>longiplicatus</i> , W., pp. 691, 736, Pl. XI. 8	...	80	...	26	97	112	
2:1 <i>capucinus</i> , W. (398 <i>capucina</i> , W., p. 701), Pl. XI. 23, p. 736 ...	...	81	92	...	...	113	
3 <i>leopardellus</i> , W., p. 692, Pl. XI. 9	129	...	...	...	...	...	
4 <i>punctiferanus</i> , W., p. 692, Pl. XI. 10	...	...	93	...	98	...	
5 <i>trochilidanus</i> , W., p. 693, Pl. XI. 11	...	...	94	...	...	...	
6 <i>fuscoviridis</i> , W., p. 693, Pl. XI. 12	...	82	...	27	...	...	
7 <i>lichenoides</i> , W., p. 694, Pl. XI. 13	...	...	...	...	...	114	
8 <i>subsenescens</i> , W., p. 695, Pl. XI. 14	...	...	95	...	...	...	
PANAPHELIX, W., p. 695							
1 <i>marmorata</i> , W., p. 696, Pl. XI. 15—16	...	...	...	...	99	...	
DIPTERINA, Meyr., p. 697							
1 <i>fulvosericæ</i> , W., p. 697, Pl. XI. 17—18	130	83	96	28	...	...	
TORTRIX, L., pp. 698, 736							
1 <i>chlorocalla</i> , W., p. 699, Pl. XI. 19	...	...	...	...	...	115	
2 <i>metallurgica</i> , W., p. 699, Pl. XI. 20	...	...	97	29	...	...	
3 <i>thoracina</i> , W., p. 700, Pl. XI. 21	131	...	...	...	...	...	
4 <i>falerniana</i> , W., p. 701, Pl. XI. 22	...	...	98	...	...	...	
5 <i>capucina</i> , W., pp. 701, 736, Pl. XI. 23	...	...	...	...	...	...	
385:1 <i>Archips capucinus</i> , W., p. 736	...	81	92	...	...	113]	
6 <i>rubiginis</i> , W., p. 702, Pl. XI. 24	...	84	...	...	...	...	
CAPUA, Stph., p. 703							
1 <i>flavopicta</i> , W., p. 703, Pl. XI. 25	132	...	...	...	...	...	
2 <i>picta</i> , W., p. 703, Pl. XI. 26	133	...	...	...	...	...	
3 <i>flavocincta</i> , W., p. 704, Pl. XI. 27	...	...	...	...	...	116	
4 <i>trigonifer</i> , W., p. 704, Pl. XI. 28	...	...	...	...	...	117	
5 <i>pleonectes</i> , W., p. 705, Pl. XII. 1	...	...	...	...	...	118	
6 <i>castaneana</i> , W., p. 705, Pl. XII. 2	134	...	...	...	...	...	
7 <i>glaucoviridana</i> , W., p. 706, Pl. XII. 3	135	...	...	...	...	...	
8 <i>variabilis</i> , W., p. 706, Pl. XII. 4	...	...	99	...	100	...	
9 <i>ochrocyprea</i> , W., p. 708, Pl. XII. 5	136	...	...	...	...	...	
10 <i>fulva</i> , W., p. 708, Pl. XII. 6	137	...	...	...	...	...	
EPAGOGE, Hb., p. 709							
1 <i>infaustana</i> , W., p. 709, Pl. XII. 7	138	...	100	...	101	119	
2 <i>xanthogona</i> , W., p. 710, Pl. XII. 8	...	...	...	...	...	120	
3 <i>pernitida</i> , W., p. 710, Pl. XII. 9	...	...	...	...	...	121	
4 <i>argentinotata</i> , W., p. 711, Pl. XII. 10	...	...	...	...	...	122	
VI. TINEIDAE, pp. 711, 737							
OPOSTEGA, Z., p. 711							
1 <i>maculata</i> , W., p. 711, Pl. XXV. 12	...	...	101	...	...	...	
2 <i>dives</i> , W., p. 711, Pl. XXV. 13	139	...	...	...	...	...	
OPOGONA, Z., pp. 712, 737							
1 <i>aurisquamosa</i> , Btl., pp. 713, 737, Pl. XXV. 14	140	85	102	30	...	123	Marquesas Is., Society Is.
EREUNETIS, Meyr., pp. 714, 737							
1 <i>simulans</i> , Btl., pp. 715, 737, Pl. XXV. 15	...	86	...	...	...	...	Marquesas Is., Fiji
2 <i>zebrina</i> , Btl., p. 715, Pl. XXV. 16	...	87	...	...	...	...	
3 <i>minuscule</i> , Wlsm., pp. 716, 737, Pl. XXV. 17	...	88	...	...	...	124	West Indies, [? Colombia]
4 <i>flavistriata</i> , W., p. 716, Pl. XXV. 18	...	...	...	31	...	...	
PHILODORIA, W., pp. 717, 737							
1 <i>succedanea</i> , W., p. 717, Pl. XXV. 19	?	...	...	...	102	...	
2 <i>auroromagnifica</i> , W., p. 718, Pl. XXV. 20	...	89	...	...	...	...	
3 <i>floscula</i> , W., p. 718, Pl. XXV. 21	...	...	...	...	...	125	
4 <i>micropetala</i> , W., p. 719, Pl. XXV. 22	141	...	...	...	...	...	
5 <i>splendida</i> , W., pp. 719, 737, Pl. XXV. 23	142	90	103	32	...	...	

Genus	Species		Kauai	Oahu	Molokai	Lanai	Maui	Hawaii	Distribution
54	...	PHILODORIA (contd.)							
426	6	<i>basalis</i> , W., p. 720, Pl. XXV. 24	...	...	...	...	103	...	
427	7	<i>nigrella</i> , W., p. 721, Pl. XXV. 25	...	...	...	...	...	126	
55	...	GRACILARIA, Hw., p. 721							
428	1	<i>marginestrigata</i> , W., p. 721, Pl. XXV. 26	143	91	104	...	...	...	
429	2	<i>epibathra</i> , W., p. 722, Pl. XXV. 27	...	...	105	...	...	...	
56	...	BEDELLIA, Stn., p. 723							
430	1	<i>somnulentella</i> , Z., p. 723, Pl. XXV. 28	...	...	...	...	...	127	Europe, Canaries, Madeiras, United States, Australia, New Zealand
431	2	<i>minor</i> , Busck, p. 724	...	92	106	...	...	128	Florida
432	3	<i>struthionella</i> , W., p. 725	...	93	...	...	...	129	
433	4	<i>orchilella</i> , W., p. 725	144	94	...	...	...	130	
57	...	SETOMORPHA, Z., p. 726							
434	1	<i>rutella</i> , Z., n. synn. = <i>dryas</i> , Btl., p. 726 = <i>rupicella</i> , Z.; <i>operosella</i> , Z.; <i>inamoenella</i> , Z.; = <i>runderella</i> , Z.; <i>multimaculella</i> , Chmb.; = <i>corticinella</i> , Snln.; <i>discipunctella</i> , Rbl.	...	95	...	...	...	131	N. and S. America, W. Indies, Canaries, W. and S. Africa, India, Ceylon, Celebes
58	...	ACROLEPIA, Crt., p. 726							
435	1	<i>aureonigrella</i> , W., p. 727	...	...	107	...	...	...	
59	...	MONOPIS, Hb., pp. 727, 737							
436	1	<i>monachella</i> , Hb., p. 727	...	96	...	33	...	132	Europe, India, Burmah, Ceylon, W. and S. Africa
437	2	<i>crociapitella</i> , Clms., pp. 728, 737	...	97	108	34	...	133	Europe, Canaries, U.S.
438	3	<i>obumbrata</i> , Btl., p. 728	...	98	...	...	...	...	
60	...	TINEA, L., p. 729							
439	1	<i>fuscipunctella</i> , Hw., p. 729	...	...	...	...	...	134	Europe, W. Asia, N., W. and S. Africa, N. America, Labrador, Australia, New Zealand
61	...	PARAPHASIS, W., p. 730							
440	1	<i>perkinsi</i> , W., p. 730	145	...	...	...	...	...	
62	...	(7 : 1) GELECHIA, Hb., p. 731							
441	(21 : 1)	<i>gossypiella</i> , Sndrs., p. 731							
62	441	Totals	145	98	108	34	103	134	

Summary of the above list.

	ENDEMIC					APODEMIC	Total
	Walker	Butler	Meyrick	Wlsm.	Total	Auct.	
Genera ...	...	3	3	20	26	36	62
Species ...	1	28	5	386	420	21	441
Subspecies	...	...	...	13	13	...	13



## FAMILY TYPE.

The impression produced is that generalised (archaic) forms are absent from Hawaiiia: the fauna is a specialised one, but derived from now extinct palaeomorphs. Evolution in Hawaiiia has taken place in a manner locally peculiar, and correlation with other faunae seems impossible, owing to the extinction of those forms from which the faunae of Australia and New Zealand were likewise derived on diverging lines, the points of divergence having been eliminated.

## GENERA.

26 Genera are endemic, of which *Hyposmocoma*, Btl., contains no less than 177 species; 36 are apodemic (Total 62). Of the apodemic genera five only present points for consideration, the others being widely distributed, and of no local interest.

		S. America	N. America	W. Indies	Pacifica	Hawaiiia	Australia
1	<i>Ereunetis</i> , Meyr.	?	...	*	*	*	*
2	<i>Stoeberhinus</i> , Btl.	...	...	...	*	*	...
3	<i>Autosticha</i> , Meyr.	...	...	...	*	*	...
4	<i>Lineodes</i> , Gn. ...	*	*	*	...	*	...
5	<i>Oecia</i> , Wlsm. ...	*	*	*	...	*	...

*Oecia* may be dismissed as a domestic species, introduced by commerce, probably viâ San Francisco.

*Lineodes* (*Pyrallidina*, not properly a micro, *vide* p. 469), has not yet been recognised in Australia or the Pacific and is the only really American element in the entire fauna—it can at most be regarded as a mere straggler.

*Ereunetis*, *Stoeberhinus*, and *Autosticha* are Pacifican morphs, the first extending to the West Indies, and perhaps occurring in Colombia.

The endemic genera are of Pacifican origin, and comparison would be made with Australian, or New Zealand, geneomorphs; *Eccoptycera* is allied to the North American *Proteopteryx*, Wlsm., but it is equally allied to the Australian genera *Strepsicrates*, Meyr. (which has been recorded from the West Indies, and occurs also in the United States and the Canaries), *Bathrotoma*, Meyr., etc.

## SPECIES.

The following is a careful analysis of the 441 species as now recorded from Hawaiiia: of these 420 are endemic and 21 apodemic. 336 endemic and 8 apodemic



Summarising the above we obtain the following results :

	Species occurring in one island only			Species occurring in more than one island			Total of species occurring in each island
	Endemic	Apodemic	Total	Endemic	Apodemic	Total	
Kauai ...	96	...	96	42	7	49	145
Oahu ...	34	2	36	51	11	62	98
Molokai ...	51	...	51	48	9	57	108
Lanai ...	10	...	10	19	5	24	34
Maui ...	70	...	70	30	3	33	103
Hawaii ...	75	3	78	47	9	56	134
(Island?)	...	3	3	...	...	...	3
HAWAIIA	336	8	344	85	12	97	441

The following is the distribution of the 21 apodemic species :

	Hawaii		S. America	N. America	W. Indies	Africa	Europe	Asia	Celebes	New Guinea	Australia	New Zealand	New Caledonia	Fiji	Society Is.	Marquesas Is.	Pitcairn Id.	Hawaii
1	330	<i>Plutella maculipennis</i> , Crt. ...	*	*	*	*	*	*	..	..	*	*	..	..	..	..	..	*
2	366	<i>Crociosema plebeiana</i> , Z. ...	*	*	*	*	*	*	..	..	*	*	..	..	..	..	..	*
3	324	<i>Endrosis lactella</i> , Schiff. ...	..	*	..	*	*	*	..	..	*	*	..	..	..	..	..	*
4	21	<i>Phthorimaea operculella</i> , Z. ...	*	*	*	*	*	..	..	..	*	*	..	..	..	..	..	*
5	439	<i>Tinea fuscipunctella</i> , Hw. ...	..	*	..	*	*	*	..	..	*	*	..	..	..	..	..	*
6	430	<i>Bedellia somnulentella</i> , Z. ...	..	*	..	..	*	..	..	..	*	*	..	..	..	..	..	*
7	434	<i>Setomorpha rutella</i> , Z. ...	*	*	*	*	..	*	*	..	..	..	..	..	..	..	..	*
8	436	<i>Monopis monachella</i> , Hb. ...	..	*	..	*	*	*	..	..	..	..	..	..	..	..	..	*
9	3	<i>Trichoptilus oxydactylus</i> , Wkr. ...	..	?	*	..	..	*	..	*	*	..	..	..	..	..	..	*
10	437	<i>Monopis crocicapitella</i> , Clms. ...	..	*	..	(Is.)	*	..	..	..	..	..	..	..	..	..	..	*
11	325	<i>Oecia maculata</i> , Wlsm. ...	*	..	*	..	..	..	..	..	..	..	..	..	..	..	..	*
12	419	<i>Ereunetis minuscula</i> , Wlsm. ...	?	..	*	..	..	..	..	..	..	..	..	..	..	..	..	*
13	4	<i>Platyptilia fuscicornis</i> , Z. ...	*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*
14	431	<i>Bedellia minor</i> , Busck ...	..	*	..	..	..	..	..	..	..	..	..	..	..	..	..	*
15	21: 1	<i>Gelechia gossypiella</i> , Sndrs. ...	..	..	..	..	..	*	..	..	..	..	..	..	..	..	..	*
16	71	<i>Stigmatophora quadrifasciata</i> , W. ...	..	..	..	..	..	..	..	*	..	..	..	..	..	..	..	*
17	384	<i>Archips postvittatus</i> , Wkr. ...	..	..	..	..	..	..	..	..	*	..	*	..	..	..	..	*
18	417	<i>Ereunetis simulans</i> , Btl. ...	..	..	..	..	..	..	..	..	..	..	..	*	..	*	..	*
19	416	<i>Opogona aurisquamosa</i> , Btl. ...	..	..	..	..	..	..	..	..	..	..	..	..	*	*	..	*
20	22	<i>Stoeberhinus testaceus</i> , Btl. ...	..	..	..	..	..	..	..	..	..	..	..	..	..	*	..	*
21	70	<i>Stigmatophora honorariella</i> , W. ...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	*	*

*Crociosema plebeiana*, Z., *Trichoptilus oxydactylus*, Wkr., and *Setomorpha rutella*, Z., are widely distributed, and probably not artificially introduced.

*Plutella maculipennis*, Crt., is universally distributed, feeding on cabbages and other *Cruciferae*. It is difficult to determine the natural range of this species which

has undoubtedly been extended by commerce—only if the larva feeds on no native Crucifer in Hawaiiia would it be possible to demonstrate that the insect has been introduced, although probably this is the case.

*Bedellia somnulentella*, Z., and *minor*, Busck—These species feed on *Convolvulus* and *Ipomoea*; the former is widely distributed, the latter, which has been recently differentiated, was hitherto only known to occur in Texas. Two endemic species of *Bedellia* are found in Hawaiiia, and others in Australia, it is therefore possible that these two have not been artificially introduced.

*Phthorimaea operculella*, Z., mines the leaves of Tobacco, and bores into the tubers of the Potato, causing serious damage. It is now widely distributed, and carefully weighing the evidence deducible from the long list of references given under this species (pp. 483—4), it would appear to have originated in the United States, where it feeds also on other *Solanaceae*, and was doubtless introduced to the Islands viâ San Francisco.

*Gelechia gossypiella*, Sndrs., is noted by Mr. Perkins as an introduced species, highly injurious to Cotton, at Honolulu; it is recorded from India and Japan, but is not known to occur in America.

*Tinea fuscipunctella*, Hw., *Monopsis crocicapitella*, Clms., *Monopsis monachella*, Hb., *Endrosis lactella*, Schiff., and *Oecia maculata*, Wlsm., are domesticated species, doubtless introduced by commerce. *Oecia maculata*, hitherto only recorded from Brazil and the West Indies, is common in houses, having the same habits as *Endrosis lactella*—it probably ranges through Central America (a second species occurring in Costa Rica), and was not improbably introduced to the Islands from San Francisco, where it will doubtless be found. The American *Monopsis crocicapitella*, Clms., is now recognised as identical with a European species disguised under the synonyms *hyalinella*, Stgr., *lombardica*, Hrng., and *heringi*, Rdsn.; this also occurs in Tenerife.

*Archips postvittanus*, Wkr., is certainly an importation from Australia, where it is common and very variable; Mr. Perkins also notes its occurrence in New Caledonia. The late Francis Walker established a record when dealing with specimens of this species, describing them under 12 different idionyms distributed among 4 genera in two subfamilies of the *Tortricidae*.

*Ereunetis minuscula*, Wlsm., is from the West Indies (and probably Colombia), while *E. simulans*, Btl., occurs in the Marquesas and Fiji—other species are found in Australia, and allied genera in Malaysia and Africa, it would therefore appear that these forms are widely distributed, and it would be rash to assume that they have been introduced.

*Platyptilia fuscicornis*, Z., only hitherto recorded from Colombia, is probably more widely distributed, but confused with *cosmodactyla*, Hb., and *acanthodactyla*, Hb., this may, or may not have been introduced—evidence is wanting.

*Stoerberhinus testaceus*, Btl., *Opogona aurisquamosa*, Btl., and *Ereunetis simulans*,

Btl., are Pacifican forms, all occurring in the Marquesas, *aurisquamosa* in the Society Islands, and *simulans* in Fiji.

The distribution of the remaining two species is peculiar, *Stagmatophora honorariella*, Wlsm., occurring in Pitcairn Island, while its close ally *Stagmatophora quadrifasciata*, Wlsm., is found in New Guinea.

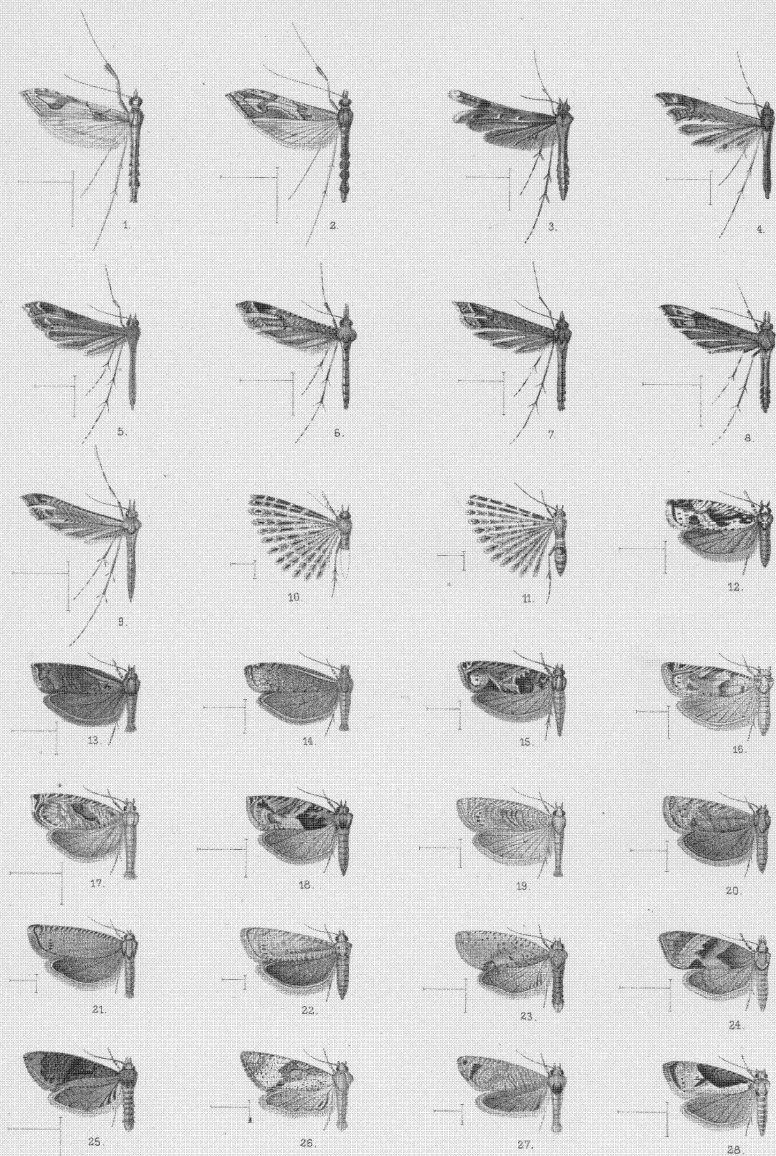
*Ethmia colonella*, Wlsm., although not yet recorded elsewhere, has almost certainly been imported from Malaysia, but so much error has been introduced under the name "*hilarella*, Wkr.," which was the original record of this species from Hawaïia, that great caution is needed in tracing its derivation. Let it be noted that there are several yellow hind-winged forms of *Ethmia* allied to *colonella*, very closely related to each other, but distinct, and that *\*bicolorella*, Pgnstk. (nec Gn.), from Malaysia, appears to be identical with *colonella*.

# DESCRIPTION OF PLATE X. (VOL. I.)

## MICROLEPIDOPTERA.

### PYRALIDINA, PTEROPHORINA, ORNEODINA, TINEINA—TORTRICIDAE.

	PAGE
Fig. 1. <i>Lineodes ochrea</i> .....(Type ♀ 26723) Kauai .....	469
„ 2. „ <i>subextincta</i> .....(Paratype ♂ 28671) Kauai .....	470
„ 3. <i>Trichoptilus oxydactylus</i> , Wkr. ....(♂ 25040) Oahu .....	471
„ 4. <i>Platyptilia fuscicornis</i> , Z. ....(♂ 25117) Oahu .....	472
„ 5. „ <i>brachymorpha</i> , Meyr. ....(♂ 25789) Hawaii .....	474
„ 6. „ <i>rhynchophora</i> , Meyr. ....(♂ 28457) Maui .....	475
„ 7. „ <i>insularis</i> .....(Type ♂ 26142) Molokai ..	475
„ 8. „ <i>littoralis</i> , Btl. ....(Type ♀ 169: 82. ♀ Mus. Br.) Oahu .....	476
„ 9. „ „ var. ....(♂ 25194) Hawaii.....	476
„ 10. <i>Orneodes angustestriata</i> .....(Type ♂ 26730) Kauai .....	477
„ 11. „ <i>objurgatella</i> .....(Type ♀ 25087) Oahu .....	477
„ 12. <i>Eccoptocera foetorivorans</i> , Btl. ....(♀ 27013) Kauai .....	674
„ 13. „ „ .....(♂ 28709) Molokai .....	674
„ 14. „ „ .....(♂ 28071) Hawaii.....	674
„ 15. <i>Crociosema plebeiana</i> , Z. ....(♂ 26481) Lanai .....	675
„ 16. <i>Gypsonoma leprarum</i> .....(Type ♀ 26256) Molokai .....	676
„ 17. <i>Adenoneura falsifalcellum</i> .....(Type ♂ 27506) Hawaii.....	677
„ 18. „ (?) <i>marcidellum</i> .....(Type ♀ 25001) Oahu .....	678
„ 19. „ <i>plicatum</i> .....(Type ♂ 25717) Hawaii.....	678
„ 20. „ <i>latifemoris</i> .....(Type ♀ 28127) Maui .....	679
„ 21. „ <i>montanum</i> .....(Type ♂ 27483) Hawaii.....	679
„ 22. „ <i>rufipennis</i> , Btl. ....(♀ 25097) Oahu .....	680
„ 23. <i>Cryptophlebia illepida</i> , Btl. + <i>illepida</i> , Btl. ....(♂ 25231) Hawaii.....	681
„ 24. „ „ + <i>fulva</i> .....(Type ♀ 25649) Hawaii.....	681
„ 25. „ „ + <i>suffusa</i> .....(Type ♂ 25184) Hawaii.....	682
„ 26. „ <i>tetrao</i> .....(Type ♂ 25224) Hawaii.....	683
„ 27. „ <i>vulpes</i> .....(Type ♂ 27465) Hawaii.....	683
„ 28. <i>Enarmonia</i> (?) <i>conspicua</i> .....(Type ♀ 28134) Maui .....	684



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*P.W.M. Trap. Chromo. Leiden.*

Lord Walsingham. Microlepidoptera.

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11  
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27  
28

# DESCRIPTION OF PLATE XI. (VOL. I.)

## MICROLEPIDOPTERA.

### TORTRICIDAE.

				PAGE
Fig. 1.	<i>Enarmonia walsinghami</i> , Btl.	.....(♀ 25555)	Hawaii.....	684
" 2.	" <i>crassicornis</i>	.....(Type ♂ 25212)	Hawaii.....	685
" 3.	" (?) <i>storeella</i>	.....(Type ♀ 28185)	Maui .....	686
" 4.	" (?) <i>obliqua</i>	.....(Type ♀ 25828)	Hawaii.....	686
" 5.	<i>Bactra straminea</i> , Btl.	.....(♂ 25859)	Oahu .....	687
" 6.	<i>Pararrhaptica perkinsana</i>	.....(Type ♂ 28174)	Maui .....	689
" 7.	<i>Archips postvittanus</i> , Wkr.	.....(♀ 28002)	Kauai .....	690
" 8.	" <i>longiplicatus</i>	.....(Type ♂ 26604)	Maui .....	691
" 9.	" <i>leopardellus</i>	.....(Type ♂ 27678)	Kauai .....	692
" 10.	" <i>punctiferanus</i>	.....(Type ♂ 26581)	Maui .....	692
" 11.	" <i>trochilidanus</i>	.....(Type ♂ 25170)	Molokai .....	693
" 12.	" <i>fuscoviridis</i>	.....(Type ♂ 26412)	Lanai .....	693
" 13.	" (?) <i>lichenoides</i>	.....(Type ♀ 28064)	Hawaii.....	694
" 14.	" (?) <i>subsenescens</i>	.....(Type ♀ 26334)	Molokai .....	695
" 15.	<i>Panaphelix marmorata</i>	.....(Type ♂ 26537)	Maui .....	696
" 16.	" " (+ <i>chrysochroa</i> )	.....(Type ♀ 26525)	Maui .....	697
" 17.	<i>Dipterina fulvosericæa</i>	.....(Type ♂ 25165)	Molokai .....	697
" 18.	" "	.....(Type ♀ 26801)	Kauai .....	697
" 19.	<i>Tortrix chlorocalla</i>	.....(Type ♀ 28042)	Hawaii.....	699
" 20.	" <i>metallurgica</i>	.....(Type ♂ 26397)	Molokai .....	699
" 21.	" <i>thoracina</i>	.....(Type ♀ 26871)	Kauai .....	700
" 22.	" (?) <i>falerniana</i>	.....(Type ♀ 26076)	Molokai .....	701
" 23.	{ <i>Archips capucinus</i> .....	.....(Type ♀ 26358)	Molokai.....	{ 736 701
	{ = <i>Tortrix</i> (?) <i>capucina</i> .....			
" 24.	<i>Tortrix rubiginis</i>	.....(Type ♂ 28668)	Oahu .....	702
" 25.	<i>Capua</i> (?) <i>flavopicta</i>	.....(Type ♀ 26791)	Kauai .....	703
" 26.	" <i>picta</i>	.....(Type ♂ 26771)	Kauai .....	703
" 27.	" (?) <i>flavocincta</i>	.....(Type ♀ 25182)	Hawaii.....	704
" 28.	" <i>trigonifer</i>	.....(Type ♂ 25181)	Hawaii.....	704





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*P.W.M. Trapp. Chromo. Leiden.*

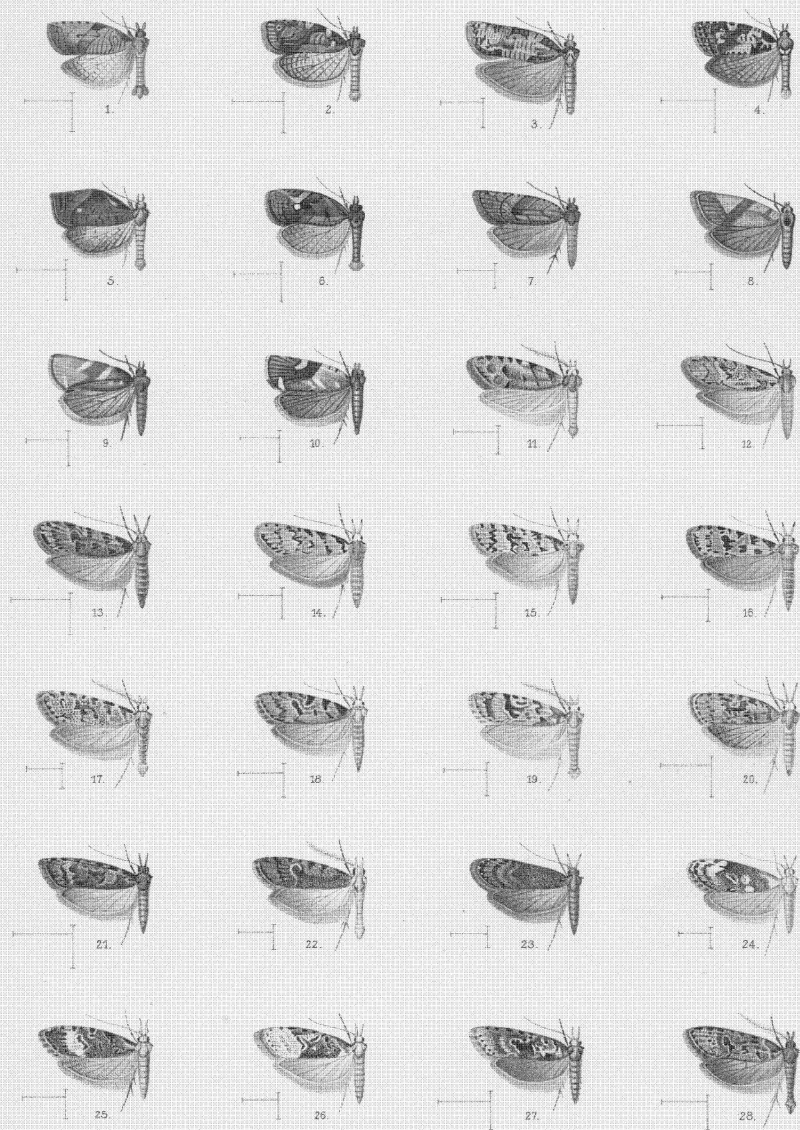
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# DESCRIPTION OF PLATE XII. (VOL. I.)

## MICROLEPIDOPTERA.

### TORTRICIDAE, CARPOSINIDAE.

		PAGE
Fig. 1.	<i>Capua pleonectes</i> .....(Type ♂ 28070) Hawaii.....	705
" 2.	" <i>castaneana</i> .....(Type ♂ 27201) Kauai .....	705
" 3.	" (?) <i>glaucoviridana</i> .....(Type ♀ 27681) Kauai .....	706
" 4.	" <i>variabilis</i> .....(Type ♂ 26312) Molokai .....	706
" 5.	" <i>ochreocuprea</i> .....(Type ♂ 26931) Kauai .....	708
" 6.	" <i>fulva</i> .....(Type ♂ 27012) Kauai .....	708
" 7.	<i>Epagoge infaustana</i> .....(Type ♀ 26945) Kauai .....	709
" 8.	" (?) <i>xanthogona</i> .....(Type ♀ 25358) Hawaii.....	710
" 9.	" (?) <i>pernitida</i> .....(Type ♀ 28641) Hawaii.....	710
" 10.	" (?) <i>argentinotata</i> .....(Type ♀ 27514) Hawaii.....	711
" 11.	<i>Heterocrossa plumbeonitida</i> .....(Type ♂ 27576) Kauai .....	654
" 12.	" <i>graminicolor</i> .....(Paratype ♀ 27630) Kauai.....	654
" 13.	" <i>olivaceonitens</i> .....(Type ♀ 26927) Kauai .....	655
" 14.	" <i>subolivacea</i> .....(Type ♀ 26480) Lanai .....	655
" 15.	" <i>viridis</i> .....(Type ♀ 27259) Kauai .....	656
" 16.	" <i>nigronotata</i> .....(Type ♀ 28631) Hawaii.....	656
" 17.	" <i>crinifera</i> .....(Type ♂ 25163) Molokai .....	657
" 18.	" <i>herbarum</i> .....(Type ♀ 26477) Lanai .....	658
" 19.	" <i>graminis</i> .....(Type ♂ 27047) Kauai .....	658
" 20.	" <i>tincta</i> .....(Type ♀ 28041) Hawaii.....	659
" 21.	" <i>gemmata</i> .....(Type ♀ 28628) Hawaii.....	660
" 22.	" <i>subumbrata</i> .....(Type ♂ 25092) Oahu .....	660
" 23.	" <i>bicincta</i> .....(Type ♀ 26391) Molokai .....	661
" 24.	" <i>dispar</i> .....(Type ♀ 25678) Hawaii.....	661
" 25.	" <i>latifasciata</i> .....(Type ♀ 25352) Hawaii.....	662
" 26.	" <i>corticella</i> + <i>semitogata</i> .....(Type ♀ 27228) Kauai .....	662
" 27.	" " + <i>piperatella</i> .....(Paratype ♀ 27715) Kauai.....	663
" 28.	" " + <i>corticella</i> .....(Type ♂ 26838) Kauai .....	664



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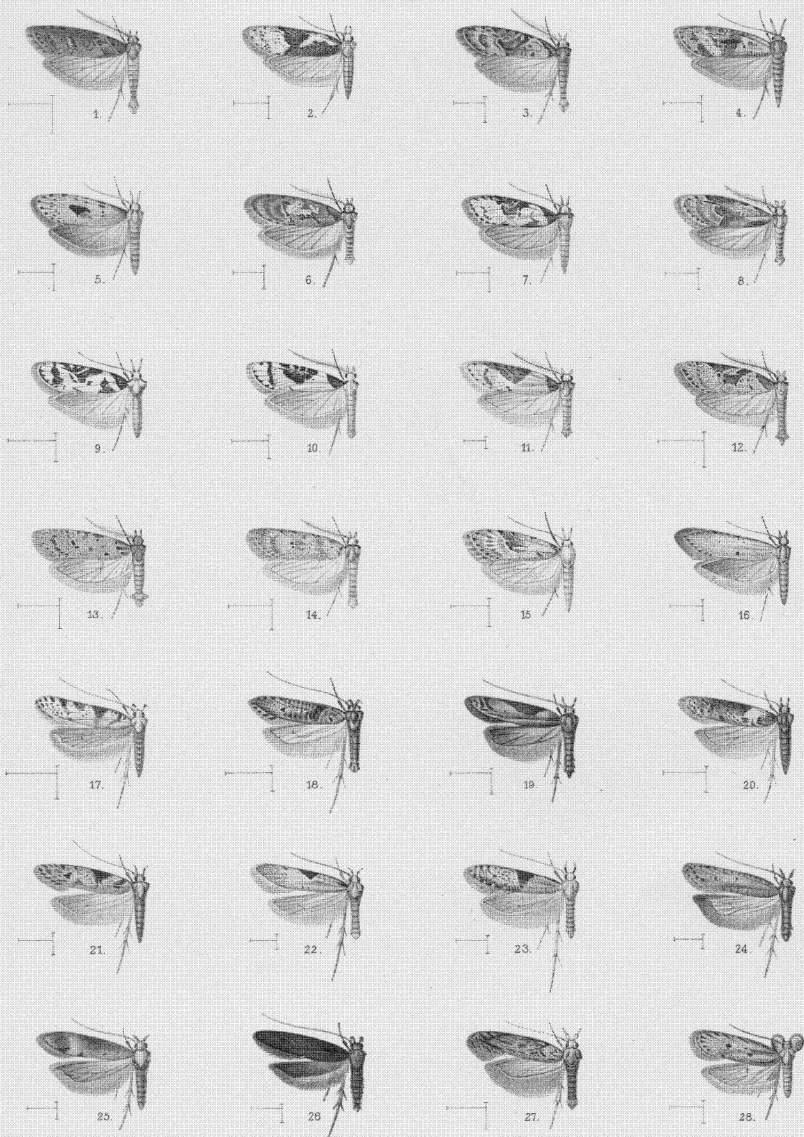
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# DESCRIPTION OF PLATE XIII. (VOL. I.)

## MICROLEPIDOPTERA.

### CARPOSINIDAE, GELECHIADAE.

			PAGE
Fig. 1.	<i>Heterocrossa ferruginea</i> .....	(Type ♂ 26393) Molokai .....	664
" 2.	" <i>togata</i> .....	(Type ♀ 26681) Maui .....	665
" 3.	" <i>divaricata</i> .....	(Type ♂ 27040) Kauai .....	665
" 4.	" <i>nigromaculata</i> .....	(Type ♀ 25147) Oahu .....	666
" 5.	" <i>distincta</i> .....	(Type ♀ 27126) Kauai .....	666
" 6.	" <i>cervinella</i> .....	(Type ♂ 27686) Kauai .....	667
" 7.	" <i>mauii</i> .....	(Type ♀ 28198) Maui .....	668
" 8.	" <i>irrorata</i> .....	(Type ♂ 26472) Lanai .....	668
" 9.	" <i>atronotata</i> .....	(Type ♀ 26526) Maui .....	669
" 10.	" <i>inscripta</i> .....	(Type ♂ 27477) Hawaii .....	669
" 11.	" <i>pusilla</i> .....	(Type ♂ 26047) Oahu .....	670
" 12.	" <i>trigononotata</i> .....	(Type ♂ 26087) Molokai .....	670
" 13.	" <i>punctulata</i> .....	(Type ♂ 28710) Molokai .....	671
" 14.	" <i>achroana</i> , Meyr. ....	(Homotype ♂ 27415) Hawaii .....	671
" 15.	" <i>solutella</i> .....	(Type ♀ 27416) Hawaii .....	672
" 16.	" <i>gracillima</i> .....	(Type ♀ 26556) Maui .....	672
" 17.	<i>Aristotelia maculaticornis</i> .....	(Type ♀ 28741) Hawaii .....	478
" 18.	" <i>nigriciliella</i> .....	(Type ♂ 28115) Hawaii .....	479
" 19.	" <i>ichthyochroa</i> .....	(Type ♂ 26398) Molokai .....	479
" 20.	" <i>epermeniella</i> .....	(Type ♀ 27671) Kauai .....	480
" 21.	" <i>notata</i> .....	(Type ♀ 26218) Molokai .....	480
" 22.	" <i>lanaiensis</i> .....	(Type ♂ 26514) Lanai .....	481
" 23.	" <i>elegantior</i> .....	(Type ♂ 25700) Oahu .....	481
" 24.	" <i>mendax</i> .....	(Type ♂ 27586) Kauai .....	481
" 25.	" <i>arcuata</i> .....	(Type ♂ 25066) Oahu .....	482
" 26.	<i>Merimnetria flaviterminella</i> .....	(Type ♂ 28611) Hawaii .....	482
" 27.	<i>Phthorimaea operculella</i> , Z. ....	( <i>sedata</i> , Btl., Type ♂ 86: 81. 7) .....	483
" 28.	<i>Stoeberhinus testaceus</i> , Btl. ....	(Type ♂ 73: 81. 7, Mus. Br.) Oahu .....	486



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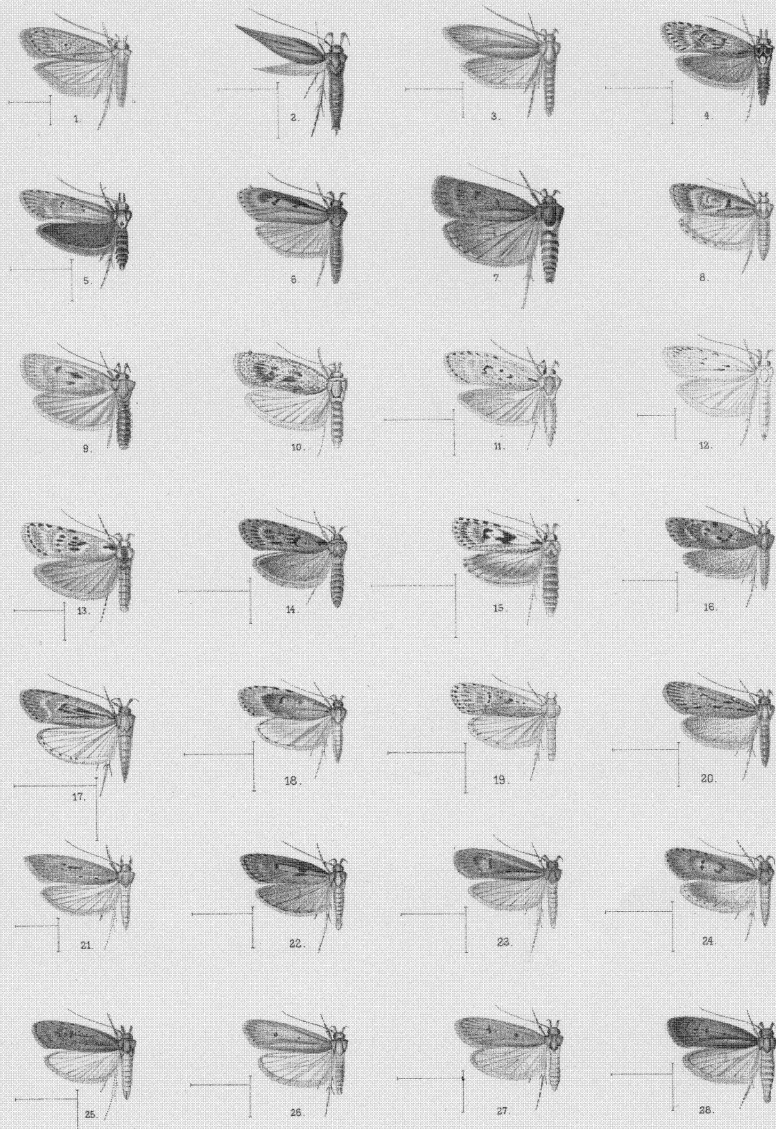
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# DESCRIPTION OF PLATE XIV. (VOL. I.)

## MICROLEPIDOPTERA.

### GELECHIADAE.

		PAGE
Fig. 1.	<i>Autosticha pelodes</i> , Meyr. (Paratype ♂ 3578, Wlsm., Mus. Meyr.) <i>Hawaii</i> ( <i>Ins.</i> ?)...	487
" 2.	<i>Hodegia apatela</i> ..... (Type ♀ 28447) Maui .....	488
" 3.	<i>Ptychothrix vagans</i> ..... (Type ♂ 27522) Kauai .....	489
" 4.	<i>Psychra phycidiformis</i> ..... (Type ♂ 27176) Kauai .....	490
" 5.	" <i>brevipalpis</i> ..... (Type ♂ 27853) Kauai .....	490
" 6.	<i>Catamempsis decipiens</i> ..... (Type ♂ 28649) Hawaii.....	491
" 7.	<i>Thyrocopta gigas</i> , Btl..... (Type ♂ 119: 81. 7, Mus. Br.) Maui...493	
" 8.	" (?) <i>viduella</i> ..... (Type ♀ 27149) Kauai .....	494
" 9.	" (?) <i>cinerella</i> ..... (Type ♀ 26986) Kauai .....	494
" 10.	" <i>megas</i> ..... (Type ♀ 28215) Maui .....	495
" 11.	" <i>albonubila</i> ..... (Type ♂ 27094) Kauai .....	495
" 12.	" <i>argentea</i> , Btl. .... (Type ♂ 100: 81. 7, Mus. Br.) Oahu...496	
" 13.	" (?) <i>minor</i> ..... (Type ♀ 26080) Molokai .....	496
" 14.	" <i>indecora</i> , Btl. .... (Type ♂ 128: 81. 7, Mus. Br.) Maui...497	
" 15.	" (= <i>lactea</i> , Btl., Type ♀ 129: 81. 7, Mus. Br.) Maui .....	497
" 16.	" <i>tessellatella</i> ..... (Type ♂ 25354) Hawaii.....	498
" 17.	" <i>depressariella</i> ..... (Type ♀ 26856) Kauai .....	498
" 18.	" <i>nubifer</i> ..... (Type ♂ 25174) Hawaii.....	499
" 19.	" <i>seminatella</i> ..... (Type ♀ 27521) Kauai .....	499
" 20.	" <i>pulverulenta</i> ..... (Type ♂ 25255) Hawaii.....	500
" 21.	" <i>epicapna</i> , Meyr. (Paratype ♂ 3567, Wlsm., Mus. Meyr.) <i>Hawaii</i> ( <i>Ins.</i> ?)...	500
" 22.	" <i>alterna</i> ..... (Type ♂ 28225) Maui .....	501
" 23.	" <i>immutata</i> ..... (Type ♂ 27760) Kauai .....	501
" 24.	" <i>fraudentella</i> ..... (Type ♂ 28728) Hawaii.....	502
" 25.	" <i>pallida</i> ..... (Type ♂ 27645) Kauai .....	502
" 26.	" <i>adumbrata</i> ..... (Type ♀ 25314) Hawaii.....	503
" 27.	" <i>inermis</i> ..... (Type ♂ 25320) Hawaii.....	503
" 28.	" <i>usitata</i> , Btl. .... (Type ♀ 69: 81. 7, Mus. Br.) Oahu .....	504



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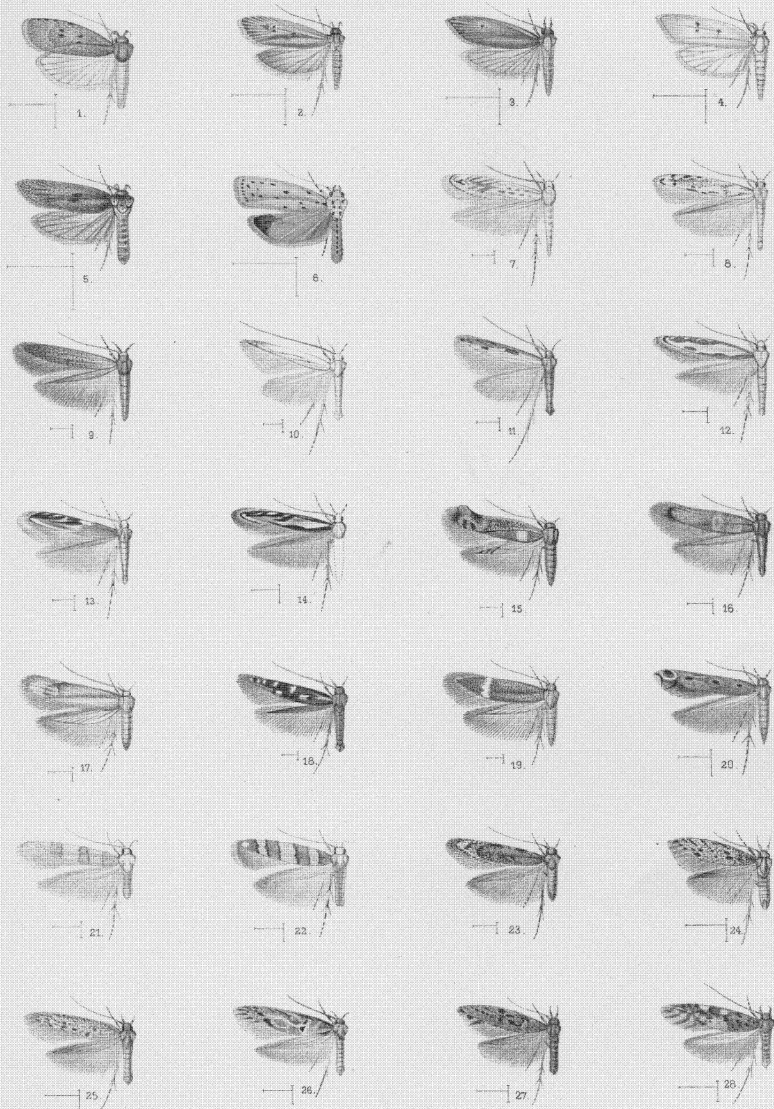
# DESCRIPTION OF PLATE XV. (VOL. I.)

## MICROLEPIDOPTERA.

### GELECHIADAE, OECOPHORIDAE, HYPONOMEUTIDAE.

		PAGE
Fig. 1.	<i>Thyrocopa abusa</i> .....(Type ♂ 3572, Mus. Meyr.) <i>Hawaii</i> ( <i>Ins.</i> ?) ...	504
" 2.	" <i>subahenea</i> .....(Type ♂ 26336) Molokai .....	505
" 3.	" <i>leonina</i> .....(Type ♂ 26434) Lanai .....	505
" 4.	" (?) <i>geminipuncta</i> .....(Type ♀ 26318) Molokai .....	506
" 5.	" (?) <i>mediomaculata</i> .....(Type ♀ 28125) Maui .....	506
" 6.	<i>Ethmia colonella</i> .....(Type ♂ 28751) Oahu .....	507
" 7.	<i>Batrachedra syrraphella</i> .....(Type ♂ 25862) Oahu .....	509
" 8.	" <i>ephelus</i> .....(Type ♂ 26199) Molokai .....	509
" 9.	" <i>bedelliella</i> .....(Type ♂ 26548) Maui .....	509
" 10.	" <i>microstigma</i> .....(Type ♂ 25141) Oahu .....	510
" 11.	" <i>supercincta</i> .....(Type ♂ 26543) Maui .....	510
" 12.	" <i>ruficiliata</i> .....(Type ♂ 25579) Hawaii.....	510
" 13.	" <i>lomentella</i> .....(Type ♂ 26013) Oahu .....	511
" 14.	" <i>sophroniella</i> .....(Type ♀ 25653) Oahu .....	511
" 15.	<i>Agonismus flavipalpis</i> .....(Type ♀ 28468) Maui .....	512
" 16.	" <i>coruscans</i> .....(Type ♂ 25745) Hawaii.....	513
" 17.	" <i>argentiferus</i> .....(Type ♀ 27392) Hawaii.....	513
" 18.	<i>Elachista spilota</i> .....(Type ♂ 28405) Maui.....	513
" 19.	" <i>longisquamella</i> .....(Type ♀ 25357) Hawaii.....	514
" 20.	<i>Stigmatophora</i> ( <i>Proterocosma</i> ) <i>incertulella</i> , Wkr. (Caenotype ♀ 26577) Maui.....	515
" 21.	" <i>honorariella</i> .....(Type ♂ 2883) Pitcairn Id. ....	515
" 22.	" <i>quadrifasciata</i> .....(Type ♀ 71801) Dinner Id. (New Guinea)...	516
" 23.	" <i>sordidella</i> .....(Type ♂ 26852) Kauai .....	516
" 24.	<i>Aphthonetus mediocris</i> .....(Type ♂ 26619) Maui .....	517
" 25.	" <i>fugitiva</i> .....(Type ♂ 27857) Kauai .....	518
" 26.	" <i>kauaiensis</i> .....(Type ♂ 27534) Kauai .....	518
" 27.	" <i>corticicolor</i> .....(Type ♂ 26557) Maui .....	519
" 28.	" <i>fluctuosa</i> .....(Type ♂ 26758) Kauai .....	519





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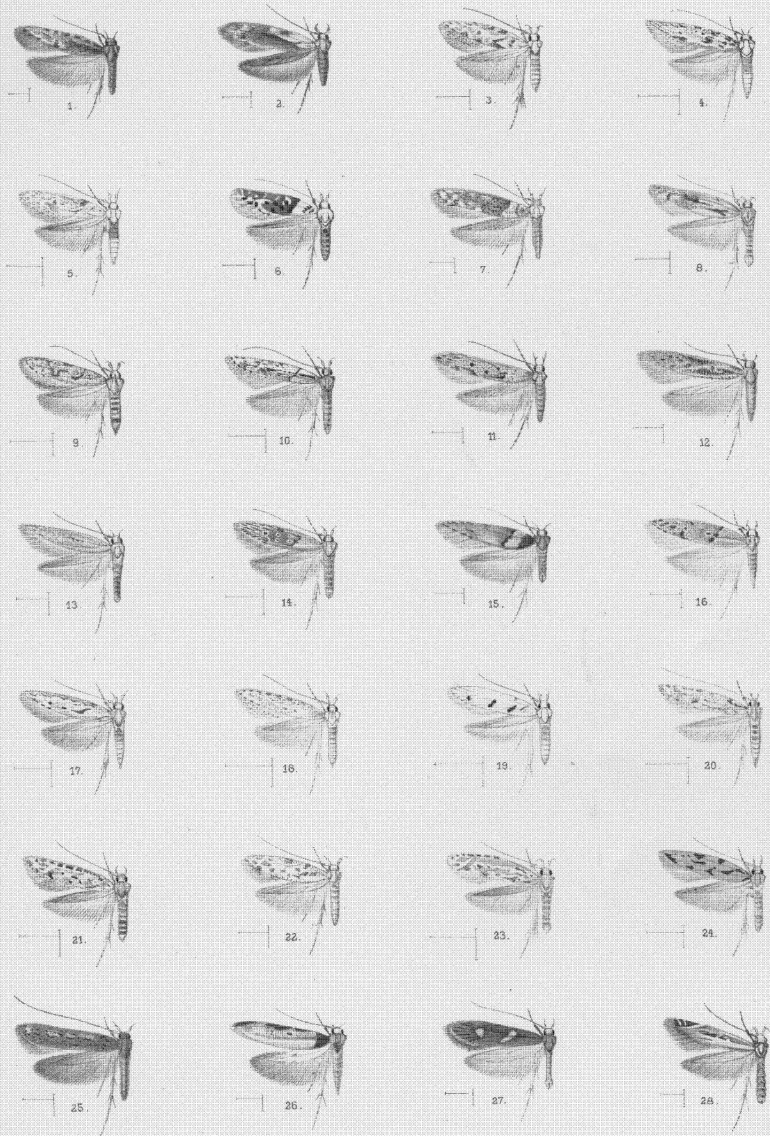
Lord Walsingham. Microlepidoptera.

# DESCRIPTION OF PLATE XVI. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Aphthonetus passerella</i> .....	(Type ♂ 26742) Kauai .....	520
" 2.	" <i>divergens</i> .....	(Type ♂ 26183) Molokai .....	520
" 3.	" <i>bitincta</i> .....	(Type ♂ 28484) Maui.....	521
" 4.	" <i>columbella</i> .....	(Type ♀ 26102) Molokai .....	521
" 5.	" <i>lichenalis</i> .....	(Type ♀ 26484) Lanai .....	522
" 6.	" <i>digressa</i> .....	(Type ♂ 28425) Maui.....	522
" 7.	" <i>eleuthera</i> .....	(Type ♀ 27385) Hawaii.....	522
" 8.	" <i>confusa</i> .....	(Type ♂ 28555) Maui.....	523
" 9.	" <i>spurcata</i> .....	(Type ♂ 28439) Maui.....	523
" 10.	" <i>plumbifer</i> .....	(Type ♂ 27039) Kauai .....	524
" 11.	" <i>trichophora</i> .....	(Type ♂ 26863) Kauai .....	524
" 12.	" <i>veterella</i> .....	(Type ♀ 27530) Kauai .....	525
" 13.	" <i>polia</i> .....	(Type ♂ 26876) Kauai .....	525
" 14.	" <i>subocellata</i> .....	(Type ♂ 28310) Maui.....	526
" 15.	" <i>nemo</i> .....	(Type ♂ 28317) Maui.....	526
" 16.	" <i>exsul</i> .....	(Type ♀ 27414) Hawaii.....	526
" 17.	" <i>albocinerea</i> .....	(Type ♀ 27169) Kauai .....	527
" 18.	" <i>diffusa</i> .....	(Type ♂ 26662) Maui.....	527
" 19.	" <i>hirsuta</i> .....	(Type ♀ 26729) Kauai .....	528
" 20.	" <i>humerala</i> .....	(Type ♀ 28237) Maui.....	528
" 21.	" <i>puncticiliata</i> .....	(Type ♂ 25746) Hawaii .....	529
" 22.	" <i>aspersa</i> , Btl. ...	(Type ♀ 106: 82. 9, Mus. Br.) <i>Hawaiiia</i> (Ins. ?) ...	529
" 23.	" <i>elegans</i> .....	(Type ♂ 28554) Maui.....	530
" 24.	" <i>sagittata</i> .....	(Type ♂ 26820) Kauai .....	530
" 25.	<i>Rhinomactrum rutilellum</i> .....	(Type ♂ 26773) Kauai .....	531
" 26.	" (?) <i>scapulellum</i> .....	(Type ♀ 28061) Hawaii .....	531
" 27.	<i>Neelysia cuprea</i> .....	(Type ♂ 27051) Kauai .....	532
" 28.	" <i>tigrina</i> , Btl. ....	(Type ♂ 120: 81. 7, Mus. Br.) <i>Hawaiiia</i> (Ins. ?) ...	533



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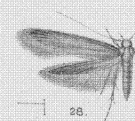
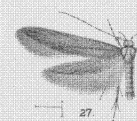
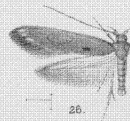
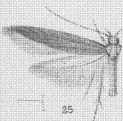
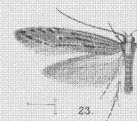
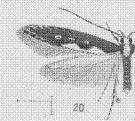
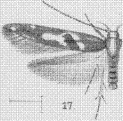
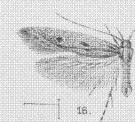
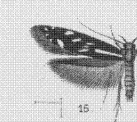
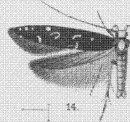
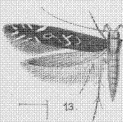
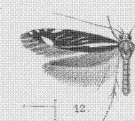
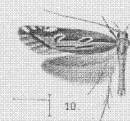
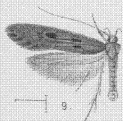
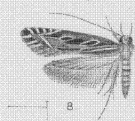
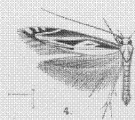
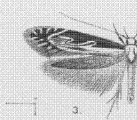
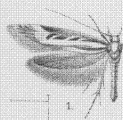
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# DESCRIPTION OF PLATE XVII. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Neelaysia lignicolor</i> .....	(Type ♂ 26534) Maui.....	533
„ 2.	„ <i>fuscodentata</i> .....	(Type ♀ 27500) Hawaii .....	534
„ 3.	„ <i>cleodorella</i> .....	(Type ♂ 25251) Hawaii .....	535
„ 4.	„ <i>anthinella</i> .....	(Type ♂ 26425) Lanai .....	535
„ 5.	„ <i>repandella</i> .....	(Type ♀ 26149) Molokai .....	536
„ 6.	„ <i>psaroderma</i> .....	(Type ♂ 25101) Oahu .....	536
„ 7.	„ <i>municeps</i> .....	(Type ♀ 26652) Molokai .....	537
„ 8.	„ <i>paltodorella</i> .....	(Type ♀ 26910) Kauai .....	537
„ 9.	„ <i>fuscifusa</i> .....	(Type ♂ 27099) Kauai .....	538
„ 10.	„ <i>agnetella</i> .....	(Type ♂ 26664) Maui.....	538
„ 11.	„ <i>rotifer</i> .....	(Type ♂ 26317) Molokai .....	539
„ 12.	„ <i>basivittata</i> .....	(Type ♂ 28285) Maui.....	539
„ 13.	„ <i>pluviella</i> .....	(Type ♀ 26236) Molokai .....	540
„ 14.	„ <i>ningorifera</i> .....	(Type ♂ 28372) Maui.....	540
„ 15.	„ <i>petalifera</i> .....	(Type ♂ 26657) Maui.....	541
„ 16.	„ <i>subaurata</i> .....	(Type ♂ 27955) Kauai .....	541
„ 17.	„ <i>exaltata</i> .....	(Type ♂ 26564) Maui.....	541
„ 18.	„ <i>poeciloceras</i> .....	(Type ♂ 28501) Maui.....	542
„ 19.	„ <i>rediviva</i> .....	(Type ♂ 27371) Kauai .....	543
„ 20.	„ <i>ningorella</i> .....	(Type ♂ 26636) Maui.....	543
„ 21.	„ <i>nemoricola</i> .....	(Type ♀ 26369) Molokai .....	544
„ 22.	„ <i>argyresthiella</i> .....	(Type ♂ 25675) Hawaii .....	544
„ 23.	„ <i>mactella</i> .....	(Type ♂ 27156) Kauai .....	545
„ 24.	„ <i>tischeriella</i> .....	(Type ♂ 27901) Kauai .....	545
„ 25.	„ <i>complanella</i> .....	(Type ♂ 26129) Molokai .....	546
„ 26.	„ <i>sciurella</i> .....	(Type ♂ 26684) Maui.....	546
„ 27.	„ <i>incongrua</i> .....	(Type ♂ 26613) Maui.....	546
„ 28.	„ <i>semifusa</i> .....	(Type ♀ 26096) Molokai .....	547



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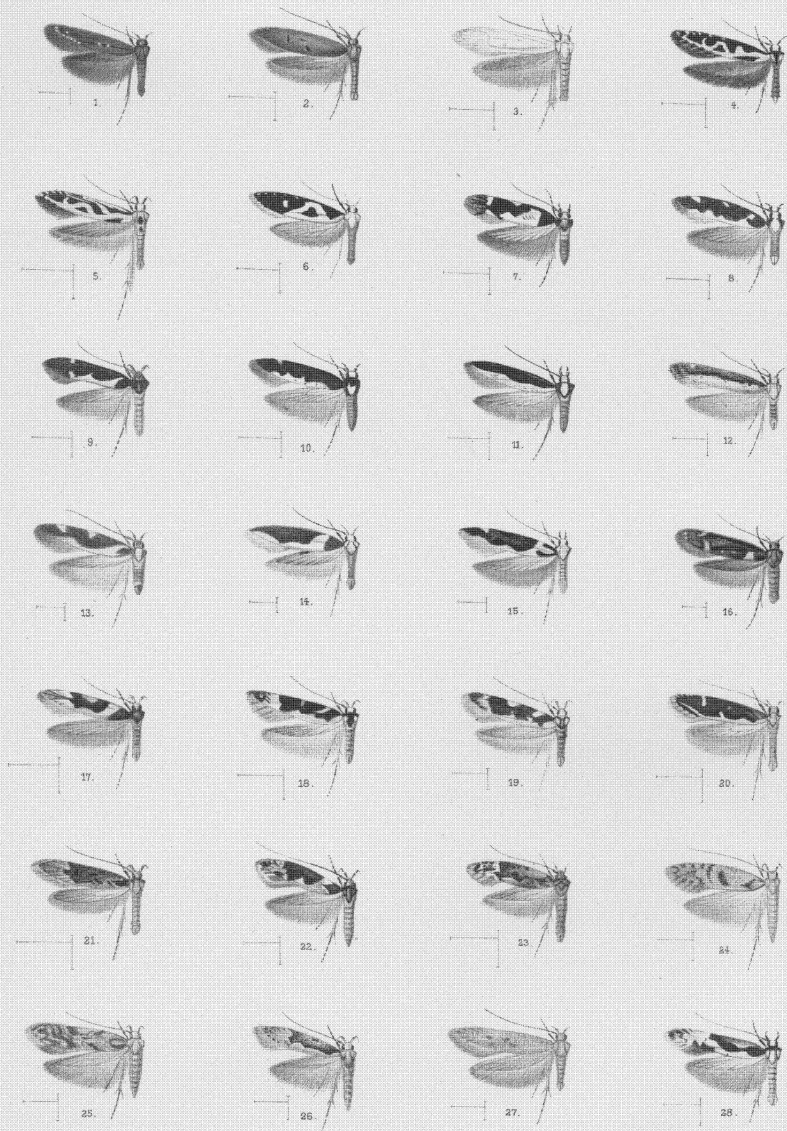
DESCRIPTION OF PLATE XVIII. (VOL. I.)

## MICROLEPIDOPTERA.

HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Neelysia terminella</i> .....	(Type ♂ 26593) Maui.....	547
„ 2.	<i>Dysphoria semicolon</i> .....	(Type ♂ 27923) Kauai .....	548
„ 3.	<i>Bubaloceras subburneum</i> .....	(Type ♂ 26107) Molokai .....	549
„ 4.	<i>Hypsmocoma exornata + exornata</i> .....	(Type ♂ 25554) Hawaii.....	550
„ 5.	„ „ + <i>flavicosta</i> .....	(Type ♂ 28742) Hawaii.....	551
„ 6.	„ <i>oculifera</i> .....	(Type ♂ 26982) Kauai .....	551
„ 7.	„ <i>nigralbida</i> .....	(Type ♂ 26760) Kauai .....	551
„ 8.	„ <i>nividorsella</i> .....	(Type ♂ 26731) Kauai .....	552
„ 9.	„ <i>corvina</i> , Btl. ... (Type ♂ 122: 81. 7, Mus. Br.)	<i>Hawaiiia</i> (Ins. ?) ...	553
„ 10.	„ <i>discella</i> .....	(Type ♀ 27907), case (27623) Kauai...	553
„ 11.	„ <i>divisa</i> .....	(Type ♂ 27015) Kauai .....	554
„ 12.	„ <i>partita</i> .....	(Type ♂ 28615) Hawaii .....	554
„ 13.	„ <i>trossulella</i> .....	(Type ♂ 26016) Oahu .....	554
„ 14.	„ <i>atrovittella</i> .....	(Type ♂ 28054) Hawaii .....	555
„ 15.	„ <i>nebulifera</i> .....	(Type ♂ 25861) Oahu .....	555
„ 16.	„ <i>torquata</i> .....	(Type ♂ 27185) Kauai .....	556
„ 17.	„ <i>notabilis</i> .....	(Type ♂ 26065) Molokai .....	556
„ 18.	„ <i>lebetella</i> .....	(Type ♂ 26651) Maui.....	557
„ 19.	„ <i>tenuipalpis</i> .....	(Type ♂ 26373) Molokai .....	557
„ 20.	„ <i>commensella</i> .....	(Type ♂ 28101) Hawaii .....	558
„ 21.	„ <i>leporella</i> .....	(Type ♂ 26992) Kauai .....	558
„ 22.	„ <i>abjecta</i> , Btl. ... (Type ♀ 48: 77. 43, Mus. Br.)	<i>Hawaiiia</i> (Ins. ?) ...	559
„ 23.	„ <i>blackburnii</i> , Btl. (Type ♂ 123: 81. 7, Mus. Br.)	<i>Hawaiiia</i> (Ins. ?) ...	559
„ 24.	„ <i>cupreomaculata</i> .....	(Type ♀ 26338) Molokai .....	561
„ 25.	„ <i>progressa</i> .....	(Type ♀ 28503) Maui.....	561
„ 26.	„ <i>domicolens</i> , Btl. + <i>domicolens</i> , Btl. ... (Type ♂ 124: 81. 7, Mus. Br.)	<i>Hawaiiia</i> (Ins. ?) ...	562
„ 27.	„ „ + <i>suffusa</i> ... (Type ♂ 27383)	Hawaii .....	563
„ 28.	„ <i>lupella + lupella</i> .....	(Type ♂ 27872) Kauai .....	563





*F.W. Frohawk del. A.J. Wendel lith.*

*P.W.M. Trapp. Circulo Leiden.*

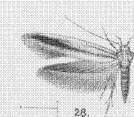
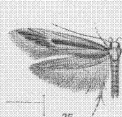
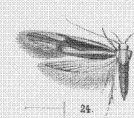
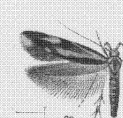
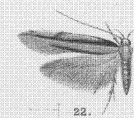
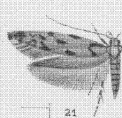
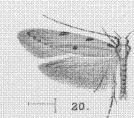
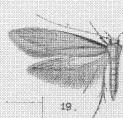
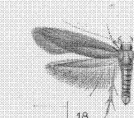
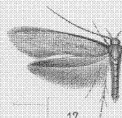
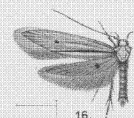
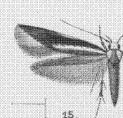
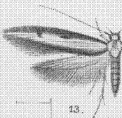
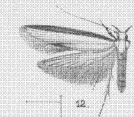
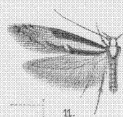
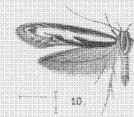
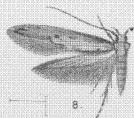
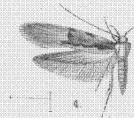
# DESCRIPTION OF PLATE XIX. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Hyposmocoma lupella</i> + <i>suffusella</i> .....	(Type ♀ 26137) Molokai .....	564
" 2.	" " + <i>candidella</i> .....	(Type ♂ 25773) Hawaii.....	564
" 3.	" <i>mediella</i> .....	(Type ♀ 25067) Oahu .....	565
" 4.	" <i>sabulella</i> .....	(Type ♀ 27566) Maui .....	565
" 5.	" <i>albifrontella</i> .....	(Type ♂ 26229) Molokai .....	565
" 6.	" <i>humero vittella</i> .....	(Type ♂ 25088) Oahu .....	566
" 7.	" <i>cincta</i> + <i>cincta</i> .....	(Type ♀ 27555) Kauai .....	566
" 8.	" " + <i>adjacens</i> .....	(Type ♀ 27335) Kauai .....	567
" 9.	" <i>mediospurcata</i> .....	(Type ♂ 28108) Hawaii.....	567
" 10.	" <i>tripartita</i> .....	(Type ♂ 26090) Molokai .....	567
" 11.	" <i>thoracella</i> .....	(Type ♂ 26459) Lanai .....	568
" 12.	" <i>limata</i> .....	(Type ♂ 27486) Hawaii.....	568
" 13.	" <i>sublimata</i> .....	(Type ♀ 28366) Maui .....	568
" 14.	" <i>advena</i> .....	(Type ♀ 26091) Molokai .....	569
" 15.	" <i>subflavidella</i> .....	(Type ♀ 26595) Maui .....	569
" 16.	" <i>auroargentea</i> .....	(Type ♂ 28402) Maui .....	570
" 17.	" <i>illuminata</i> .....	(Type ♂ 28384) Maui .....	570
" 18.	" <i>auripennis</i> , Btl. (Type ♂ 121: 81. 7, Mus. Br.) <i>Hawaiiia</i> (Ins. ?) ...		571
" 19.	" <i>rhabdophora</i> .....	(Type ♀ 26328) Molokai .....	571
" 20.	" <i>costimaculata</i> .....	(Type ♂ 26207) Molokai .....	572
" 21.	" <i>virgata</i> .....	(Type ♀ 26094) Molokai .....	572
" 22.	" <i>bilineata</i> .....	(Type ♂ 25963) Oahu .....	573
" 23.	" <i>haleakalae</i> , Btl. (Type ♀ 126: 81. 7, Mus. Br.) <i>Hawaiiia</i> (Ins. ?) ...		573
" 24.	" <i>lucifer</i> .....	(Type ♀ 26064) Molokai .....	574
" 25.	" <i>evanescens</i> .....	(Type ♂ 28378) Maui .....	574
" 26.	" <i>ferricolor</i> .....	(Type ♀ 25850) Hawaii.....	575
" 27.	" <i>impunctata</i> .....	(Type ♂ 27496) Hawaii.....	575
" 28.	" <i>straminella</i> .....	(Type ♀ 25409) Hawaii.....	576





*FW Frohawk del. A.J. Wendel lith.*

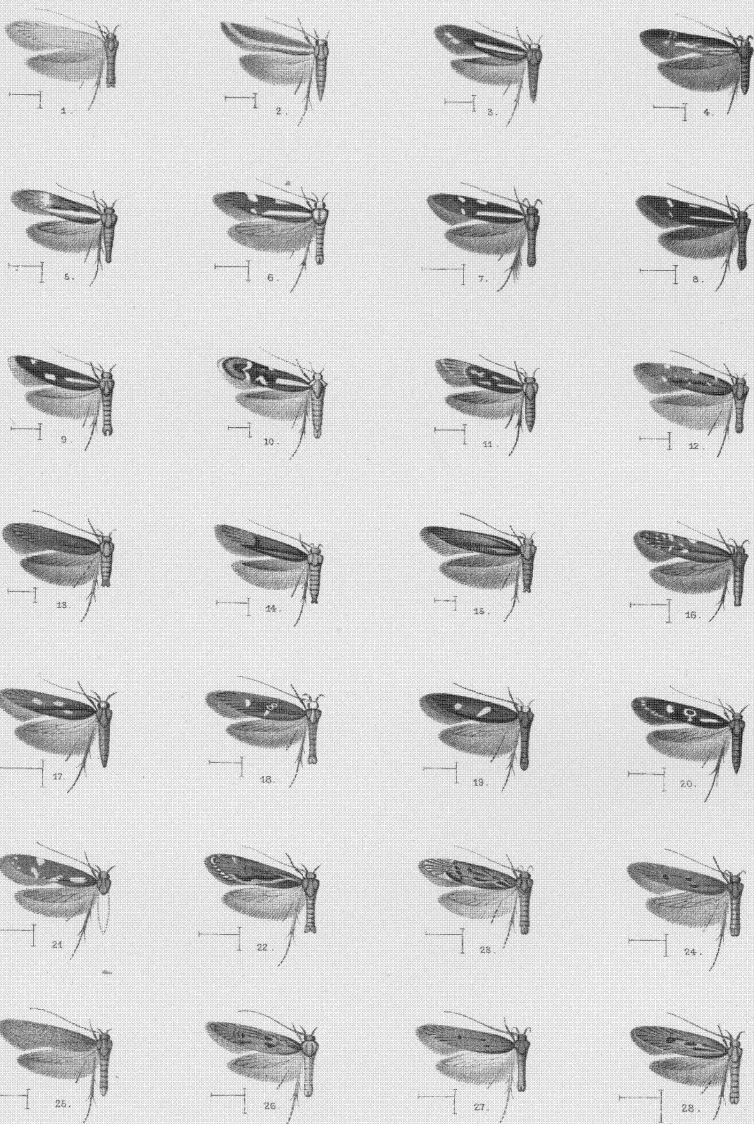
*FW M. Trapp. Chromo. Leiden.*

# DESCRIPTION OF PLATE XX. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Hyposmocoma</i>	<i>metallica</i> .....(Type ♂ 25753) Hawaii.....	576
" 2.	"	<i>continuella</i> .....(Type ♀ 26623) Maui .....	577
" 3.	"	<i>indicella</i> .....(Type ♂ 26639) Maui .....	577
" 4.	"	<i>patriciella</i> .....(Type ♂ 28306) Maui .....	577
" 5.	"	<i>butalidella</i> .....(Type ♂ 26530) Maui .....	578
" 6.	"	<i>unistriata</i> .....(Type ♂ 26382) Molokai .....	578
" 7.	"	<i>ludificata</i> .....(Type ♂ 28381) Maui .....	579
" 8.	"	<i>lineata</i> .....(Type ♂ 28266) Maui .....	579
" 9.	"	<i>propinqua</i> .....(Type ♂ 26152) Molokai .....	580
" 10.	"	<i>admirationis</i> .....(Type ♂ 26331) Molokai .....	580
" 11.	"	<i>quadristriata</i> .....(Type ♂ 26355) Molokai .....	581
" 12.	"	<i>numida</i> .....(Type ♂ 28477) Maui .....	581
" 13.	"	<i>nigrescens</i> .....(Type ♂ 27395) Hawaii.....	581
" 14.	"	<i>fuscopurpurea</i> .....(Type ♂ 26592) Maui .....	582
" 15.	"	<i>nigra</i> .....(Type ♂ 26099) Molokai...(† <i>niger</i> )...582	
" 16.	"	<i>lacertella</i> .....(Type ♀ 28526) Maui.....	582
" 17.	"	<i>trilunella</i> .....(Type ♀ 28247) Maui .....	583
" 18.	"	<i>niveiceps</i> .....(Type ♂ 26470) Lanai .....	583
" 19.	"	<i>punctifumella</i> .....(Type ♂ 28577) Maui .....	584
" 20.	"	<i>lunifer</i> .....(Type ♀ 28393) Maui .....	584
" 21.	"	<i>punctiplicata</i> .....(Type ♀ 26303) Molokai .....	584
" 22.	"	<i>marginenotata</i> .....(Type ♂ 26768) Kauai .....	585
" 23.	"	<i>vermiculata</i> .....(Type ♂ 28117) Hawaii.....	585
" 24.	"	<i>enixa</i> .....(Type ♂ 27932) Kauai .....	586
" 25.	"	<i>lugens</i> .....(Type ♂ 26583) Maui .....	586
" 26.	"	<i>ocellata</i> .....(Type ♂ 27668) Kauai .....	586
" 27.	"	<i>adolescens</i> .....(Type ♂ 27474) Hawaii.....	587
" 28.	"	<i>emendata</i> .....(Type ♂ 28289) Maui .....	587



*FW Frohawk del. A. J. Wendel lith.*

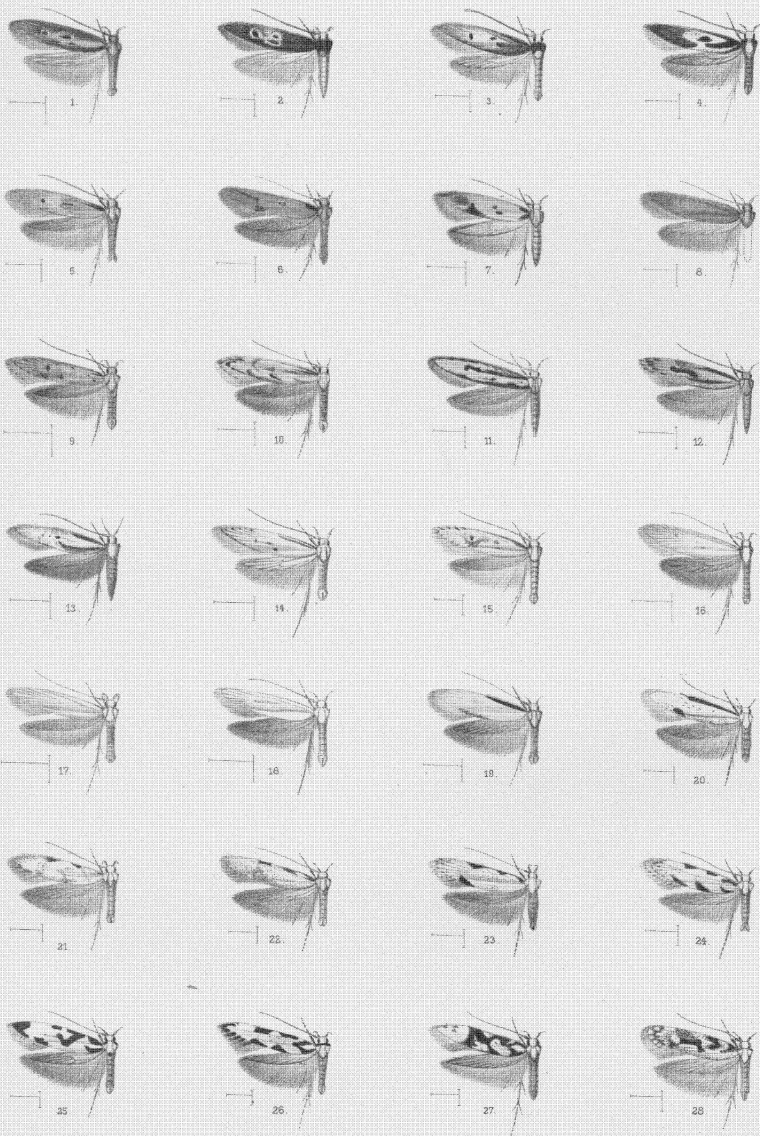
*P. W. M. Trapp. Chromo. Leiden.*

# DESCRIPTION OF PLATE XXI. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Hyposmocoma ensifer</i>	(Type ♂ 27472) Hawaii	588
" 2.	" <i>tricincta</i>	(Type ♀ 25435) Hawaii	588
" 3.	" <i>semifuscata</i>	(Type ♂ 25395) Hawaii	589
" 4.	" <i>pucciniella</i>	(Type ♂ 27408) Hawaii	589
" 5.	" <i>scepticella</i> + <i>dubia</i>	(Type ♂ 28496) Maui	590
" 6.	" " + <i>scepticella</i>	(Type ♂ 26650) Maui	590
" 7.	" <i>stigmatella</i>	(Type ♀ 26353) Molokai	591
" 8.	" <i>pallidipalpis</i>	(Type ♂ 26106) Molokai	591
" 9.	" <i>genitalis</i>	(Type ♂ 28560) Maui	592
" 10.	" <i>fractinubella</i>	(Type ♂ 28559) Maui	592
" 11.	" <i>fractivittella</i>	(Type ♀ 26743) Kauai	593
" 12.	" <i>intermixta</i>	(Type ♀ 26104) Molokai	593
" 13.	" <i>geminella</i>	(Type ♀ 27545) Kauai	594
" 14.	" <i>picticornis</i>	(Type ♂ 26177) Molokai	594
" 15.	" <i>phantasmatella</i>	(Type ♂ 26763) Kauai	595
" 16.	" <i>ossea</i>	(Type ♂ 25787) Hawaii	595
" 17.	" <i>argentea</i>	(Type ♂ 26123) Molokai	596
" 18.	" <i>subargentea</i>	(Type ♂ 26867) Kauai	596
" 19.	" <i>lactea</i>	(Type ♂ 27549) Kauai	597
" 20.	" <i>lacticretella</i>	(Type ♀ 26693) Maui	597
" 21.	" <i>persimilis</i>	(Type ♂ 25404) Hawaii	598
" 22.	" <i>trimaculata</i>	(Type ♂ 25104) Oahu	598
" 23.	" <i>albonivea</i>	(Type ♀ 26014) Oahu	599
" 24.	" <i>carbonenotata</i>	(Type ♂ 27144) Kauai	599
" 25.	" <i>alliterata</i>	(Type ♂ 26151) Molokai	600
" 26.	" <i>nigrodentata</i>	(Type ♂ 26970) Kauai	600
" 27.	" <i>obliterata</i>	(Type ♂ 26965) Kauai	601
" 28.	" <i>bacillella</i>	(Type ♂ 27971) Kauai	601



*FW. Erchawk del. Ad. Wendel lith.*

*PWM. Trop. Chromo. Leiden.*

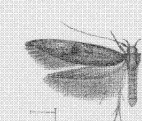
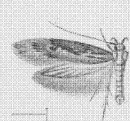
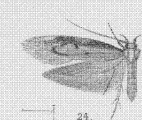
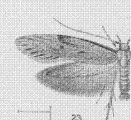
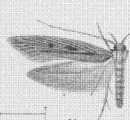
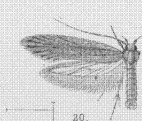
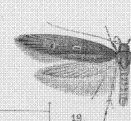
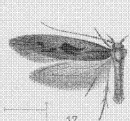
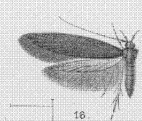
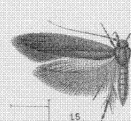
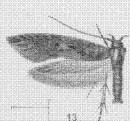
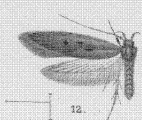
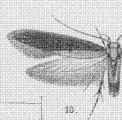
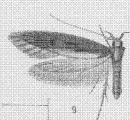
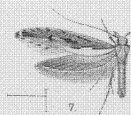
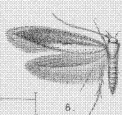
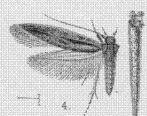
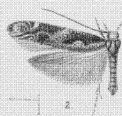
Lord Walsingham. Microlepidoptera.

# DESCRIPTION OF PLATE XXII. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Hyposmocoma canella</i> .....	(Type ♂ 26313) Molokai .....	602
" 2.	" <i>schismatica</i> .....	(Type ♂ 27600) Kauai .....	603
" 3.	" <i>cinereosparsa</i> .....	(Type ♂ 27104) Kauai .....	603
" 4.	" <i>saccophora</i> .....	(Type ♀ 25062) Oahu .....	604
" 5.	" <i>modesta</i> .....	(Type ♂ 27022) Kauai .....	604
" 6.	" <i>tomentosa</i> .....	(Type ♀ 25379) Hawaii .....	605
" 7.	" <i>dorsella</i> .....	(Type ♂ 25109) Oahu .....	605
" 8.	" <i>fallacella</i> .....	(Type ♂ 27065) Kauai .....	605
" 9.	" <i>falsimella</i> .....	(Type ♂ 26648) Maui .....	606
" 10.	" <i>ochreovittella</i> .....	(Type ♂ 25492) Hawaii .....	606
" 11.	" <i>quadripunctata</i> .....	(Type ♂ 26937) Kauai .....	607
" 12.	" <i>sudorella</i> .....	(Type ♂ 26923) Kauai .....	607
" 13.	" <i>vicina</i> .....	(Type ♂ 25052) Oahu .....	607
" 14.	" <i>fulvida</i> .....	(Type ♂ 26117) Molokai .....	608
" 15.	" <i>sideritis</i> .....	(Type ♀ 28545) Maui .....	608
" 16.	" <i>obscura</i> .....	(Type ♀ 26668) Maui .....	609
" 17.	" <i>scandens</i> .....	(Type ♂ 27084) Kauai .....	609
" 18.	" <i>maestella</i> .....	(Type ♂ 27583) Kauai .....	610
" 19.	" <i>fulvocervina</i> .....	(Type ♂ 27829) Kauai .....	610
" 20.	" <i>carnea</i> .....	(Type ♂ 26902) Kauai .....	610
" 21.	" <i>roseofulva</i> .....	(Type ♂ 27081) Kauai .....	611
" 22.	" <i>subsericea</i> .....	(Type ♂ 26360) Molokai .....	611
" 23.	" <i>ochreocervina</i> .....	(Type ♂ 25159) Oahu .....	612
" 24.	" <i>syrrhaptēs</i> .....	(Type ♂ 27125) Kauai .....	612
" 25.	" <i>paradoxa</i> .....	(Type ♂ 27303) Kauai .....	613
" 26.	" <i>minema</i> .....	(Type ♂ 28370) Maui .....	613
" 27.	" <i>bella</i> .....	(Type ♂ 27982) Kauai .....	614
" 28.	" <i>rusius</i> .....	(Type ♂ 26291) Molokai .....	614



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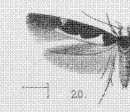
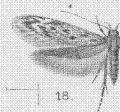
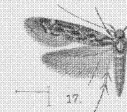
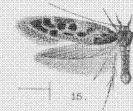
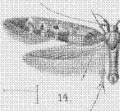
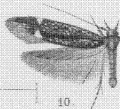
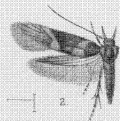
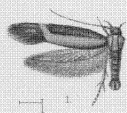
# DESCRIPTION OF PLATE XXIII. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

			PAGE
Fig. 1.	<i>Hyposmocoma auropurpurea</i> .....	(Type ♂ 25085) Oahu .....	614
" 2.	" <i>inversella</i> .....	(Type ♀ 25082) Oahu .....	615
" 3.	" <i>vinicolor</i> .....	(Type ♀ 25047) Oahu .....	615
" 4.	" <i>adelphella</i> .....	(Type ♂ 25424) Hawaii .....	615
" 5.	" <i>metrosiderella</i> .....	(Type ♂ 27972) Kauai .....	616
" 6.	" <i>similis</i> .....	(Type ♂ 25238) Hawaii .....	617
" 7.	" <i>calva</i> .....	(Type ♂ 25227) Hawaii .....	617
" 8.	" <i>tarsimaculata</i> .....	(Type ♂ 27321) Kauai .....	618
" 9.	" <i>ochreociliata</i> .....	(Type ♂ 28748) Hawaii .....	618
" 10.	" <i>malornata</i> .....	(Type ♂ 26653) Maui .....	619
" 11.	" <i>quinquemaculata</i> .....	(Type ♂ 25805) Hawaii .....	619
" 12.	" <i>conditella</i> .....	(Type ♂ 26890) Kauai .....	620
" 13.	" <i>montivolans</i> , Btl. ...	(Type ♂ 162: 82. 9, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	620
" 14.	" <i>iodes</i> .....	(Type ♂ 26321) Molokai .....	621
" 15.	" <i>liturata</i> .....	(Type ♂ 25410) Hawaii .....	622
" 16.	" <i>mimica</i> .....	(Type ♂ 26224) Molokai .....	622
" 17.	" <i>parda</i> , Btl. ...	(Type ♀ 125: 81. 7, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	623
" 18.	" <i>lixiviella</i> .....	(Type ♀ 27293) Kauai .....	623
" 19.	" <i>saliaris</i> .....	(Type ♀ 25507) Hawaii .....	624
" 20.	" <i>phalacra</i> .....	(Type ♀ 27252) Kauai .....	625
" 21.	" <i>pseudolita</i> .....	(Type ♂ 26020) Oahu .....	625
" 22.	" <i>irregularis</i> .....	(Type ♂ 27037) Kauai .....	626
" 23.	" <i>fervida</i> .....	(Type ♀ 26204) Molokai .....	626
" 24.	" <i>torella</i> .....	(Type ♂ 26058) Molokai .....	627
" 25.	" <i>arenella</i> .....	(Type ♂ 25758) Hawaii .....	627
" 26.	" <i>nebulifera</i> .....	(Type ♀ 25134) Oahu .....	628
" 27.	" <i>rubescens</i> ..	(Type ♀ 27238) Kauai .....	628
" 28.	" <i>scolopax</i> .....	(Type ♂ 26824) Kauai .....	629





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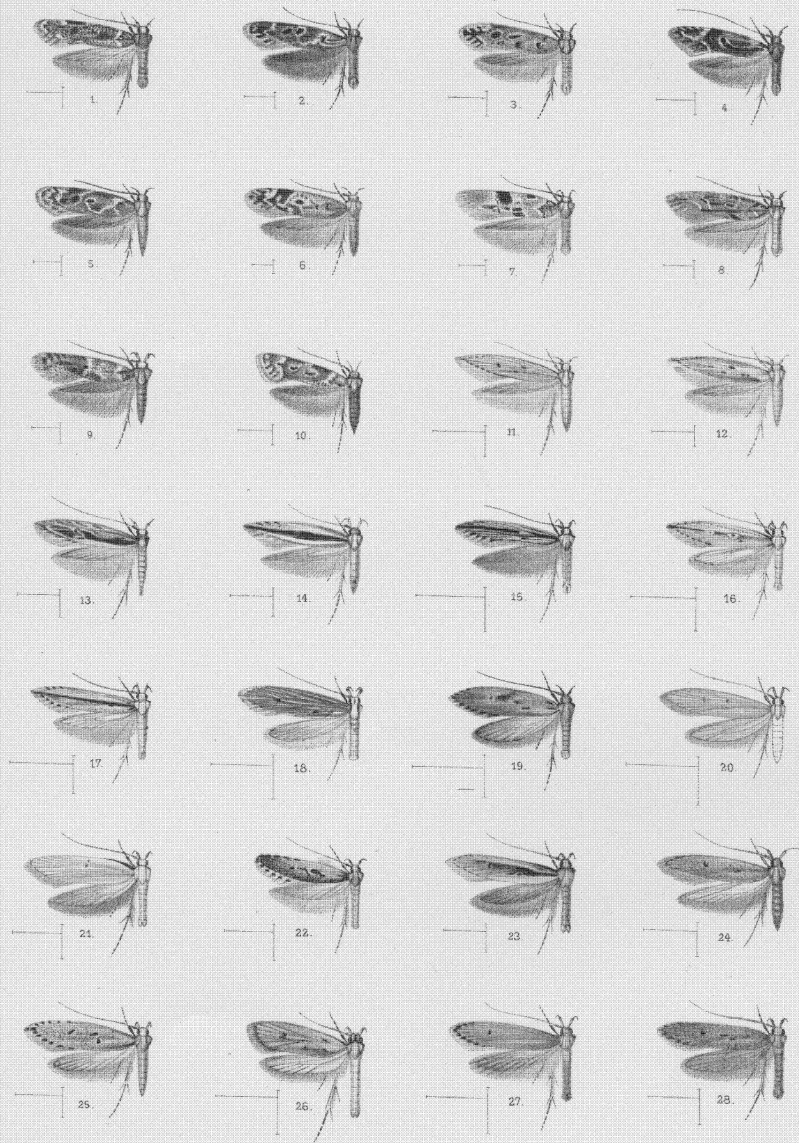
PLATE XXIII.

# DESCRIPTION OF PLATE XXIV. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE.

		PAGE
Fig. 1.	<i>Hyposmocoma subscolopax</i> .....(Type ♂ 27382) Hawaii.....	629
" 2.	" <i>tetraonella</i> .....(Type ♂ 25748) Hawaii.....	630
" 3.	" <i>somatodes</i> .....(Type ♂ 27490) Hawaii .....	630
" 4.	" <i>belophora</i> .....(Type ♂ 25652) Oahu .....	631
" 5.	" <i>turdella</i> .....(Type ♀ 28676) Lanai .....	631
" 6.	" <i>subcitrella</i> .....(Type ♀ 27620) Kauai .....	632
" 7.	" <i>inflexa</i> .....(Type ♂ 28264) Maui .....	632
" 8.	" <i>brevistrigata</i> .....(Type ♂ 26842) Kauai .....	633
" 9.	" <i>discolor</i> .....(Type ♀ 27397) Hawaii.....	633
" 10.	" <i>fuscotogata</i> .....(Type ♀ 26062) Molokai .....	634
" 11.	" <i>radiatella</i> .....(Type ♀ 25260) Hawaii.....	634
" 12.	" <i>barbata</i> .....(Type ♀ 26219) Molokai .....	635
" 13.	" <i>fractistriata</i> .....(Type ♀ 25012) Oahu .....	635
" 14.	" <i>longitudinalis</i> .....(Type ♀ 25667) Hawaii.....	636
" 15.	" <i>centralis</i> .....(Type ♂ 28034) Kauai .....	636
" 16.	" <i>chilonella + triocellata</i> .....(Type ♂ 26264) Molokai .....	637
" 17.	" " + <i>chilonella</i> .. .....(Type ♂ 27198) Kauai .....	637
" 18.	" " + <i>venosa</i> .....(Type ♂ 26837) Kauai .....	638
" 19.	" " + <i>percondita</i> .....(Type ♂ 28737) Hawaii .....	638
" 20.	" <i>epicharis</i> .....(Type ♀ 25164) Molokai .....	639
" 21.	" <i>subnitida</i> .....(Type ♂ 27436) Hawaii .....	639
" 22.	<i>Hyperdasys semiustus</i> .....(Type ♂ 26860) Kauai .....	640
" 23.	" <i>arundinicolor</i> .....(Type ♂ 27093) Kauai .....	641
" 24.	" <i>unicolor</i> .....(Type ♀ 26372) Molokai .....	642
" 25.	" <i>cryptogamiellus</i> .....(Type ♂ 27462) Hawaii.....	642
" 26.	<i>Euperissus cristatus</i> , Btl. ....(Type ♂ 72 : 81. 7, Mus. Br.) <i>Hawaii</i> ( <i>Ins.</i> ?) ...	643
" 27.	<i>Semnoprepia fulvogrisea</i> .....(Type ♂ 26951) Kauai .....	644
" 28.	" <i>petroptilota</i> .....(Type ♂ 28746) Hawaii.....	645



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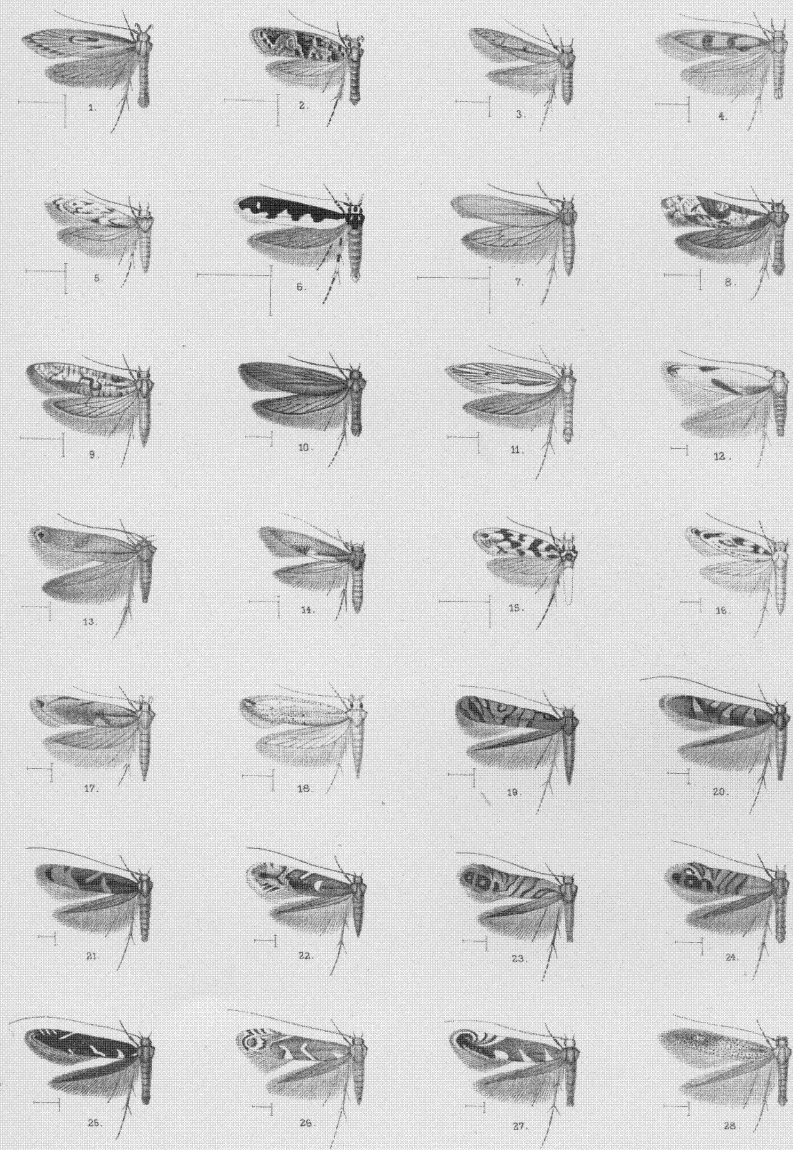
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# DESCRIPTION OF PLATE XXV. (VOL. I.)

## MICROLEPIDOPTERA.

### HYPONOMEUTIDAE, TINEIDAE.

		PAGE
Fig. 1.	<i>Semnoprepia margella</i> .....(Type ♂ 28743) Hawaii.....	645
„ 2.	<i>Diplosara lignivora</i> , Btl. ....(Type ♂ 56: 79. 8, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	647
„ 3.	<i>Blastobasis inana</i> , Btl. ....(Type ♀ 112: 81. 7, Mus. Br.) Oahu...	648
„ 4.	<i>Oecia maculata</i> , Wlsm. ....(Type ♀ 7233) St. Thomas (West Indies) ...	649
„ 5.	<i>Mapsidius auspicata</i> .....(Type ♀ 27659) Kauai .....	650
„ 6.	„ <i>quadridentata</i> .....(Type ♀ 26410) Lanai .....	651
„ 7.	„ <i>iridescens</i> .....(Type ♀ 26752) Kauai .....	651
„ 8.	<i>Prays fulvocanellus</i> .....(Type ♂ 27877) Kauai .....	652
„ 9.	„ „ .....(Type ♀ 27660) Kauai .....	652
„ 10.	„ „ .....(Paratype ♂ 27443) Hawaii .....	652
„ 11.	<i>Plutella albovenosa</i> .....(Type ♂ 25605) Hawaii.....	653
„ 12.	<i>Opostega maculata</i> .....(Type ♂ 26184) Molokai .....	711
„ 13.	„ <i>dives</i> .....(Type ♂ 27570) Kauai .....	711
„ 14.	<i>Opogona aurisquamosa</i> , Btl. ....(Type ♀ 77: 43, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	713
„ 15.	<i>Ereunetis simulans</i> , Btl. ....(Type 159: 82. 9, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	715
„ 16.	„ <i>zebrina</i> , Btl. ....(Type ♀ 74: 81. 7, Mus. Br.) <i>Hawaiiia</i> ( <i>Ins.</i> ?) ...	715
„ 17.	„ <i>minuscule</i> , Wlsm. ....(Type ♀ 7085) St. Thomas (West Indies)...	716
„ 18.	„ <i>flavistriata</i> .....(Type ♀ 26442) Lanai .....	716
„ 19.	<i>Philodoria succedanea</i> .....(Type ♀ 26695) Maui .....	717
„ 20.	„ <i>auromagnifica</i> .....(Type ♂ 25857) Oahu .....	718
„ 21.	„ <i>floscula</i> .....(Type ♂ 28597) Hawaii.....	718
„ 22.	„ <i>micropetala</i> .....(Type ♀ 27560) Kauai .....	719
„ 23.	„ <i>splendida</i> .....(Type ♂ 26430) Lanai .....	719
„ 24.	„ <i>basalis</i> .....(Type ♂ 26666) Maui .....	720
„ 25.	„ <i>nigrella</i> .....(Type ♂ 28604) Hawaii.....	721
„ 26.	<i>Gracilaria marginestrigata</i> .....(Type ♀ 25992) Oahu .....	721
„ 27.	„ <i>epibathra</i> .....(Type ♂ 26056) Molokai .....	722
„ 28.	<i>Bedellia somnulentella</i> , Z. ....(♂ 25465) Hawaii.....	723



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